

ADDITIONAL

 **PIONEER**

Service Manual

**ORDER NO.
HRT-246-0**

WATERPROOFING REPAIR MANUAL

PK-5AW

PK-R7AW

- To prevent water leakage, be sure to assemble following the directions beginning on page one.
- Perform the air leakage test on page 4 (using the GGF-025) to check for water leakage.
- To repair a leak, refer to the troubleshooting guide beginning on page 5.

THE FOLLOWING JIG, TOOLS AND MATERIALS ARE REQUIRED FOR REPAIR SERVICE.

PARTS NO.	DESCRIPTION
GGF-025	Water leak checker (Special jack with vinyl tube)
GGL-060	Crab-type screwdriver
GGL-061	Crab-type screwdriver
GGK-081	Grip with chuck for screwdriver
GYL-015	Silicone based adhesive
GEM-006	Silicone grease for fixed components
GEM-007	Silicone grease for movable components

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1780, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

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● ASSEMBLY PROCEDURE

1. Attaching the cassette mechanism assembly to the case.

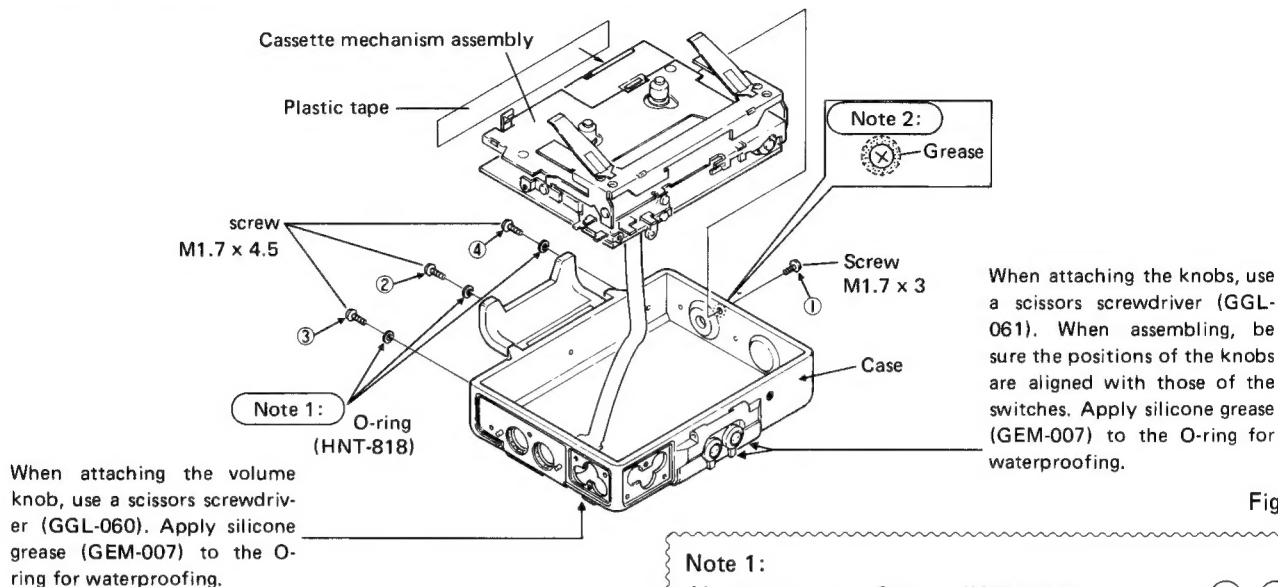


Fig. 1

- 1) The four screws holding the assembly in the case should be tightened in order from one to four as numbered in the diagram.

Note 1:

Always use new O-rings (HNV-818) on screws ②, ③ and ④. (Replace all polyester washers with O-rings.)

Note 2:

After tightening screw ①, apply silicone grease (GEM-006) to the area around the screw.

2. Attaching the escutcheon.

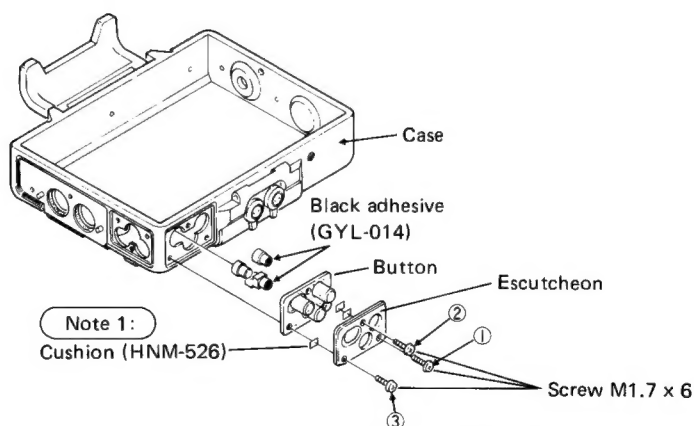


Fig. 2

- 1) Attach the cushions to the escutcheon.
- 2) Apply black adhesive (GYL-014) to the tips of the dummy buttons. (To be attached to the button)
- 3) Set the button and escutcheon in place and attach with the three screws, tightening them in order from one to three as numbered in the diagram.

Note 1:

Always use new cushions (HNM-526) for the three screws. (Attach the sticky side of the cushions to the escutcheon so that they cover the screw holes.)

Note 2:

Attach the button so that they fit firmly into the grooves in the case.

Note 3:

Be sure to apply grease (GEM-007) to the tips of each of the three screws.

3. Attaching the DC-IN side (Bracket and Escutcheon)

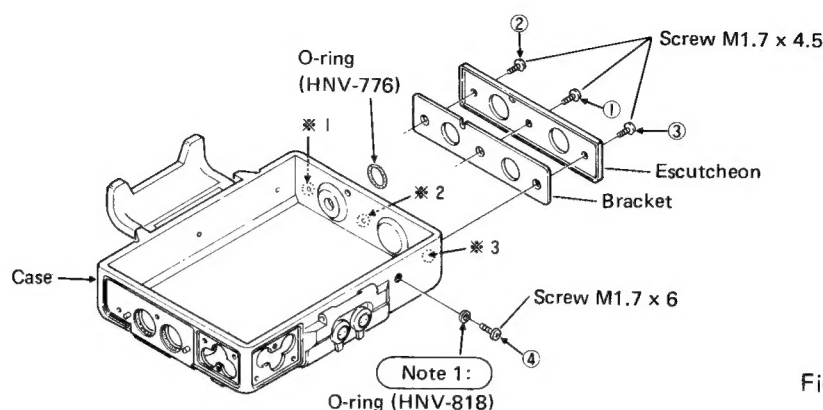


Fig. 3

- 1) Apply grease (GEM-006) to the screw holes and the area around them (marked *1, *2 and *3 in the diagram) on the outside of the case.
- 2) Set the bracket and escutcheon in place and attach with the three screws, tightening them in order from one to three as numbered in the diagram.
- 3) Place a new O-ring around screw ④ and tighten the screw.

Note 1:

Always use a new O-ring (HNV-818) with screw ④.

4. Attaching the headphone side (Bracket and Escutcheon)

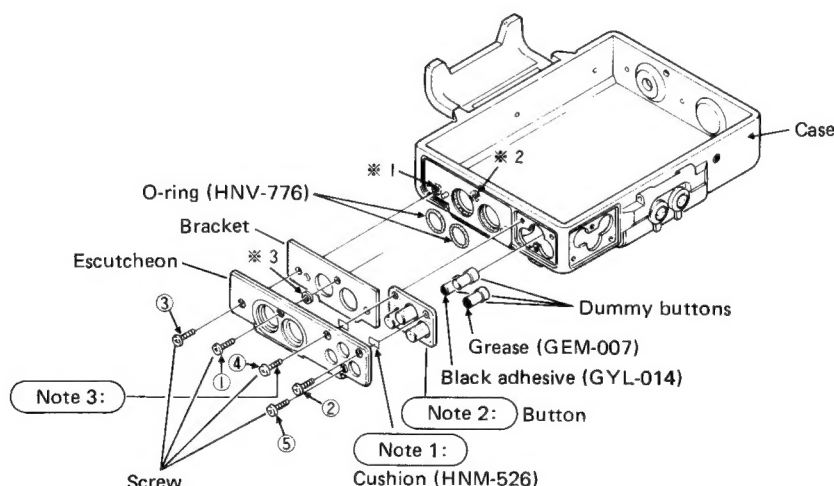


Fig. 4

- 1) Apply grease (GEM-006) to the screw holes and the area around them (marked *1 and *2 in the diagram) on the outside of the case.
- 2) Coat the rubber bushing (*3) to prevent holes from forming. (GEM-006)
- 3) Attach the cushions to the escutcheon.
- 4) Apply grease (GEM-007) and black adhesive (GYL-014) to the dummy buttons.
- 5) Insert the O-rings (HNV-776).
- 6) Set the button, bracket and escutcheon in place and attach with the five screws, tightening them in order from one to five as numbered in the diagram.

Note 1:

Always use new cushions (HNM-526) with screws ②, ④ and ⑤. (Attach the sticky side of the cushions to the escutcheon so that they cover the two screw holes.)

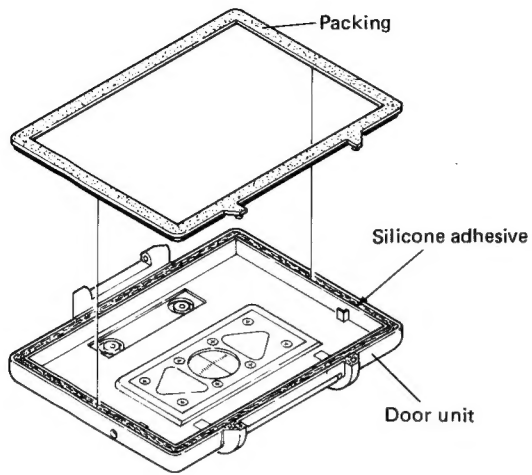
Note 2:

Attach the button so that they fit firmly into the grooves in the case.

Note 3:

Be sure to apply grease (GEM-007) to the tips of screws ②, ④ and ⑤.

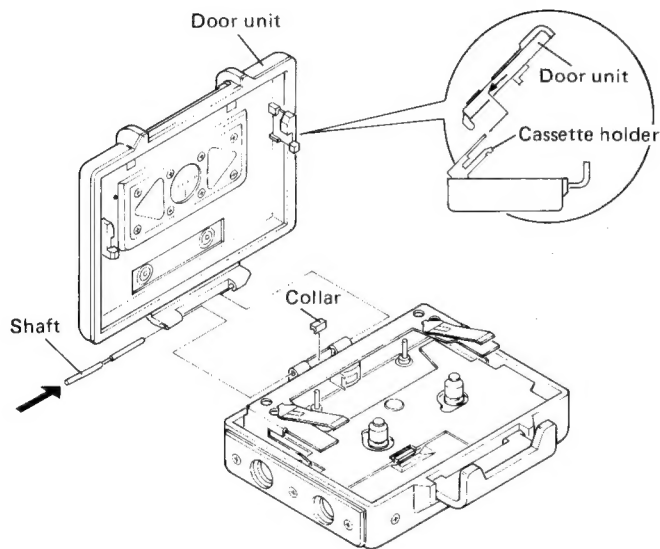
5. Attaching the Packing



- 1) Apply a silicone adhesive (GYL-015) to the grooves in the door unit.

Fig. 5

6. Attaching the Door Unit



1. Pass the cassette holder through the hinge on the door unit and then insert the shaft.

Fig. 6

●CHECKING FOR AIR(WATER) LEAKS

The PK-5AW and PK-R7AW are designed to prevent water from entering from the outside.

Water leakage testing method (See Fig. 7)

1. Insert the GGF-025 into the PHONES jack of the portable stereo cassette recorder and tighten it.
2. While blowing air through the hose, place the recorder in a bucket of water.
3. Check for any air leaks while the recorder is underwater.

Note 1:

Air will leak from the gasket when the air pressure exceeds a certain level. This is not a malfunction of the waterproof case. (If this occurs, lower the air pressure a little.) The gasket will leak at a low pressure if it is cracked or chipped, however.

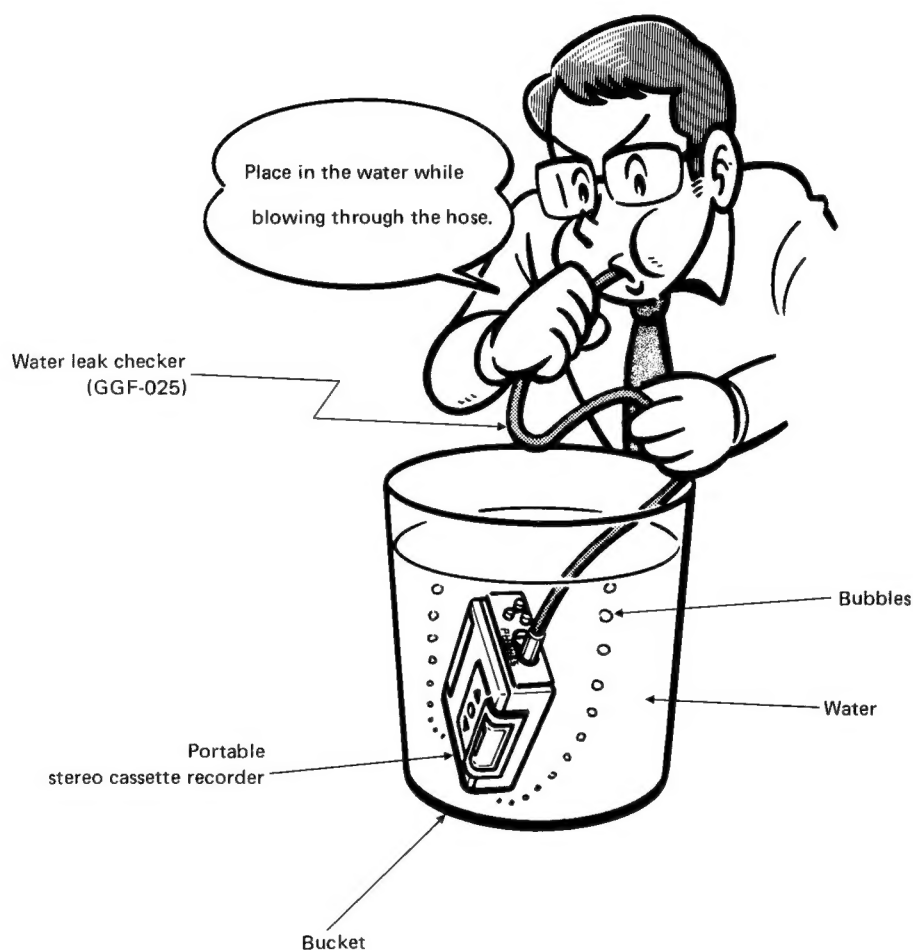


Fig. 7

● TROUBLESHOOTING GUIDE

If a leak is found at any one of points (A) — (I) during the air leak check procedure, refer to the page indicated for that point (see Figs. 8 and 9).

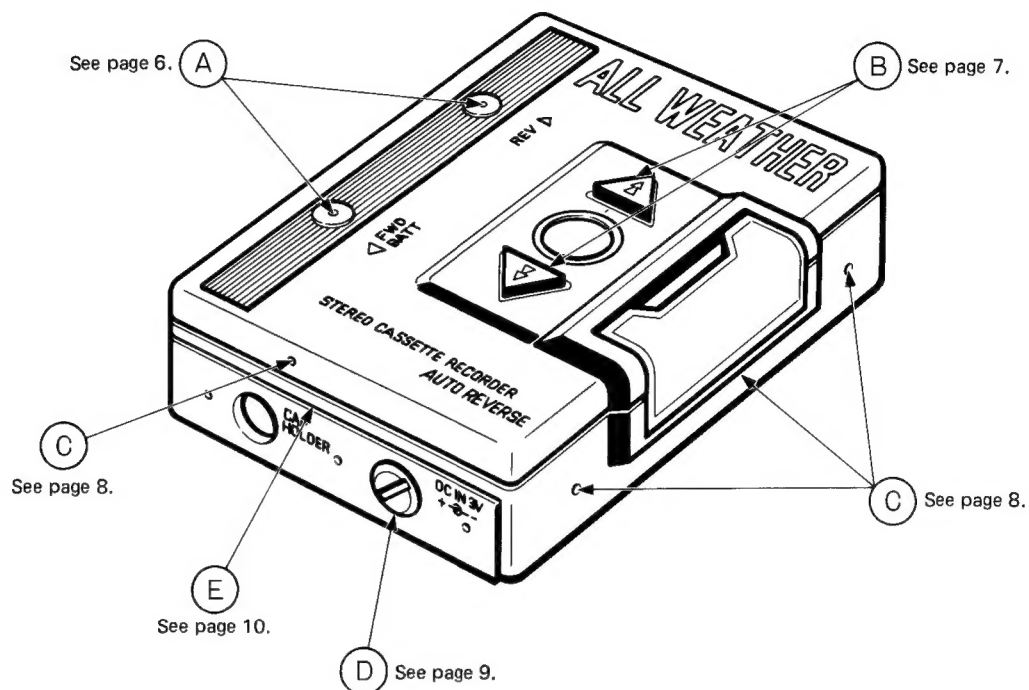


Fig. 8

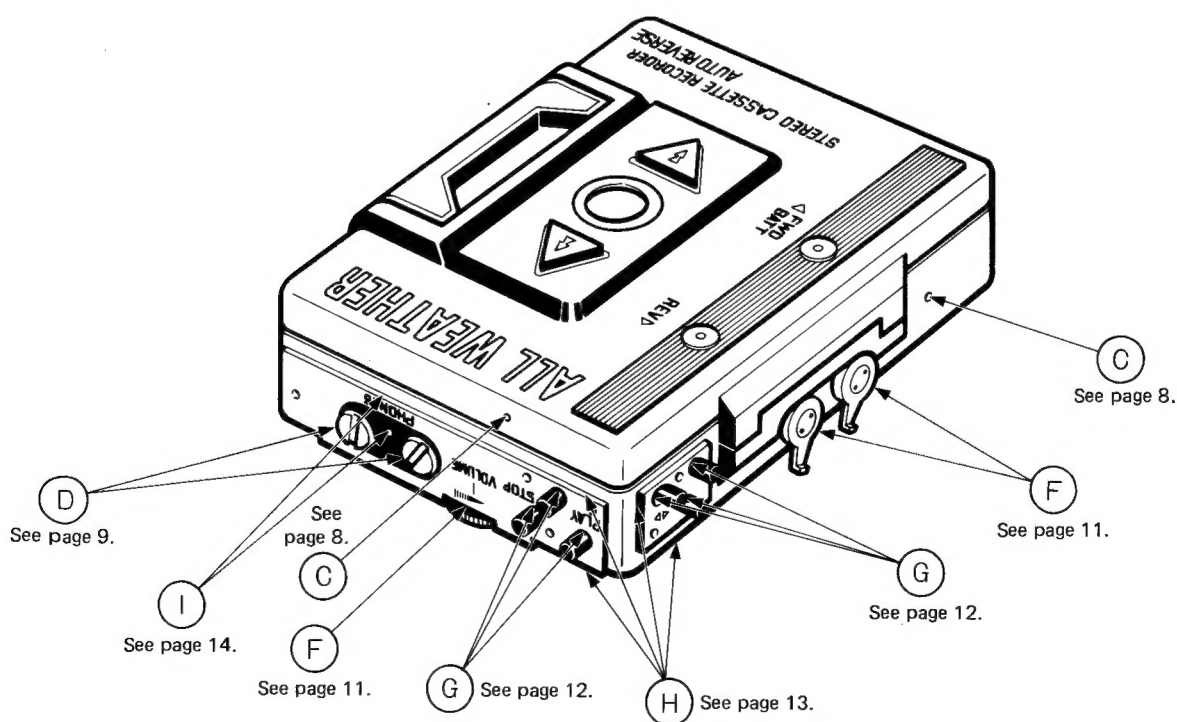


Fig. 9

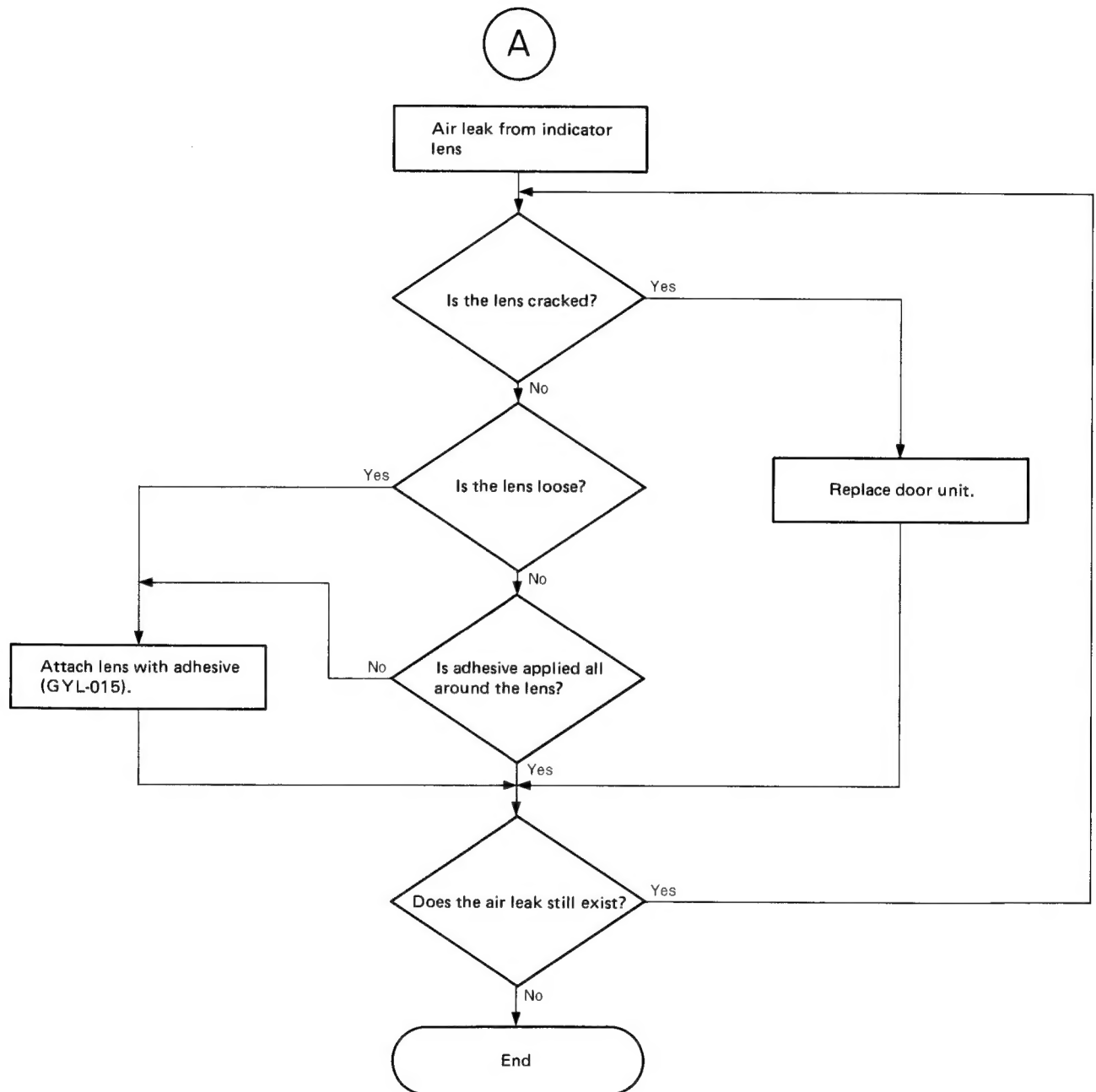


Fig. 10

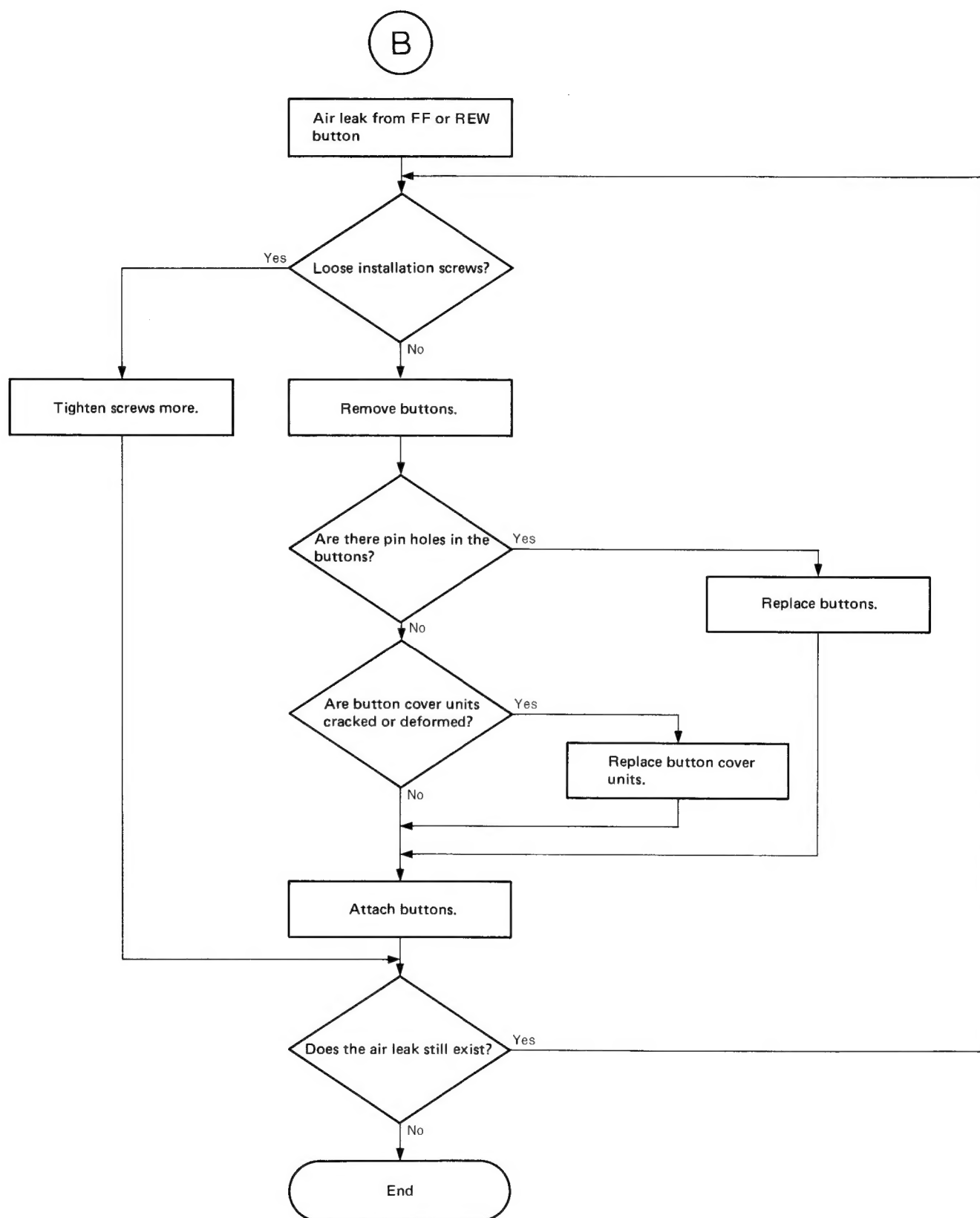


Fig. 11

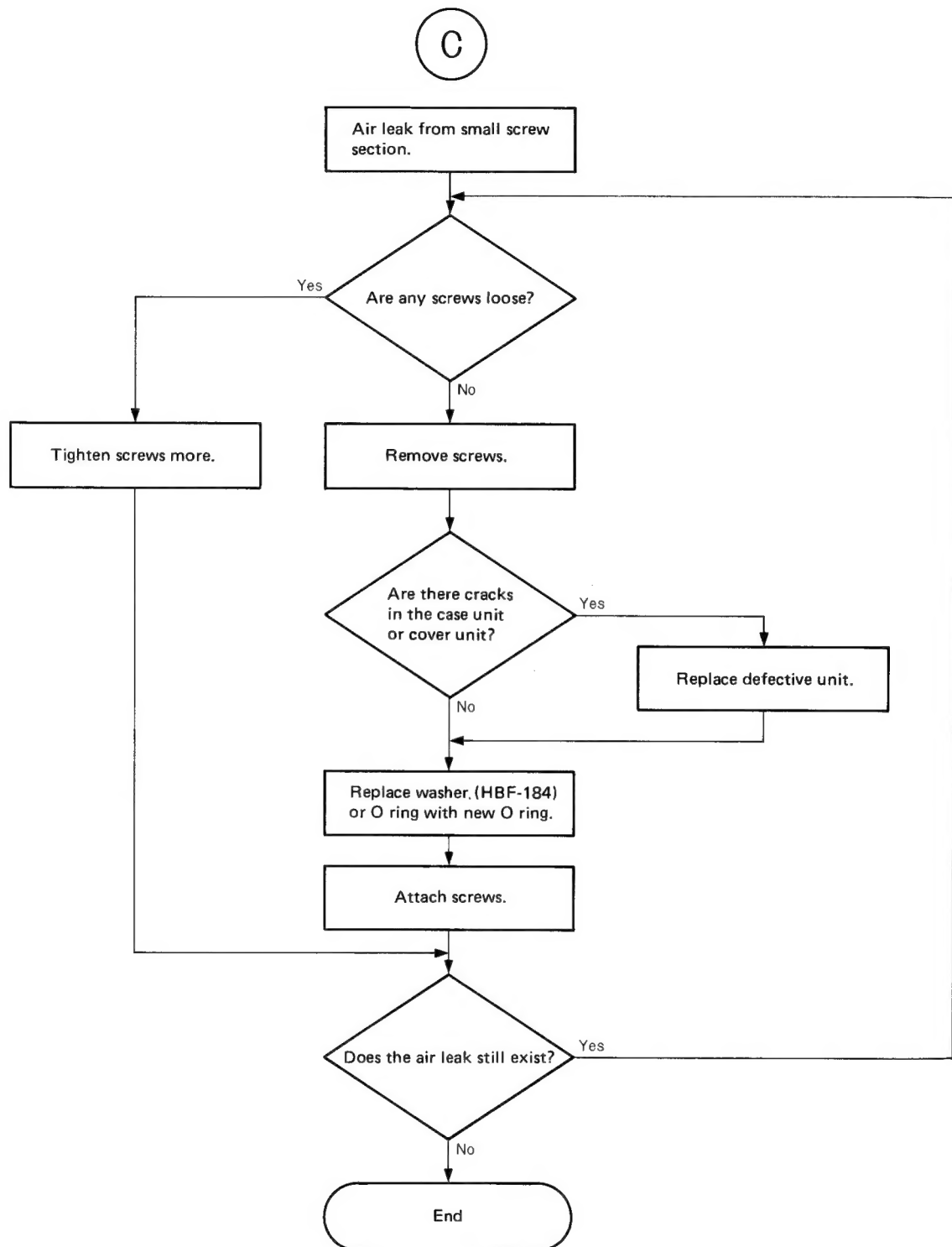


Fig. 12

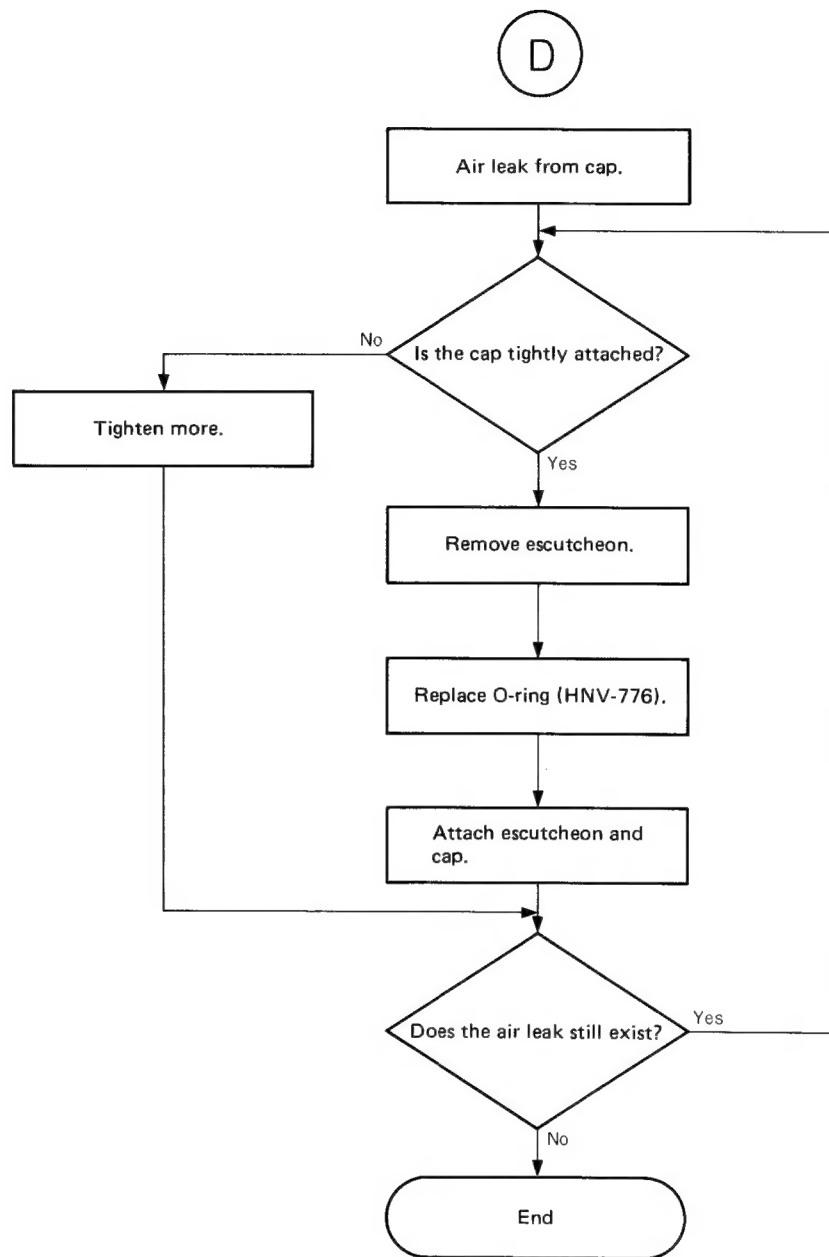


Fig. 13

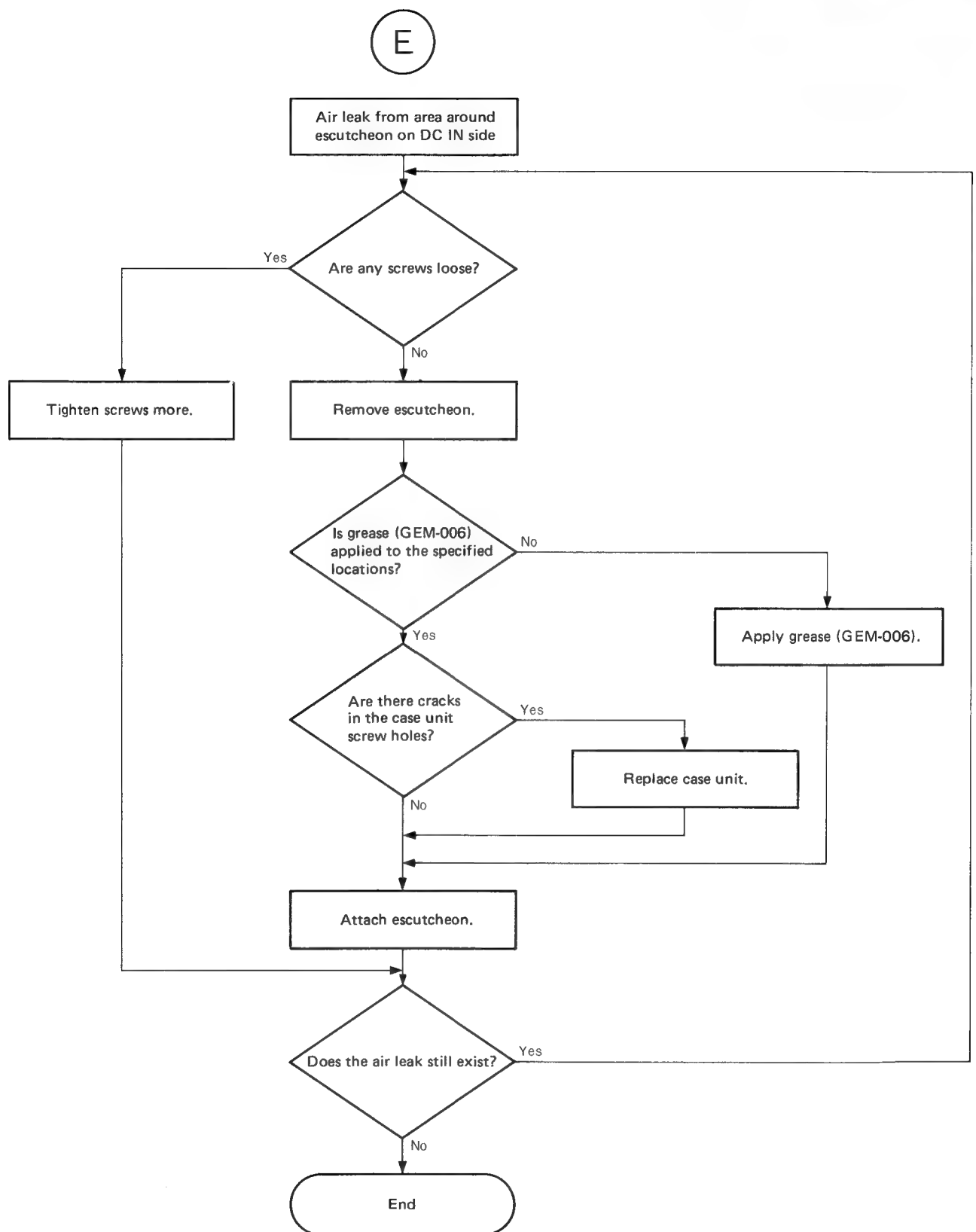


Fig. 14

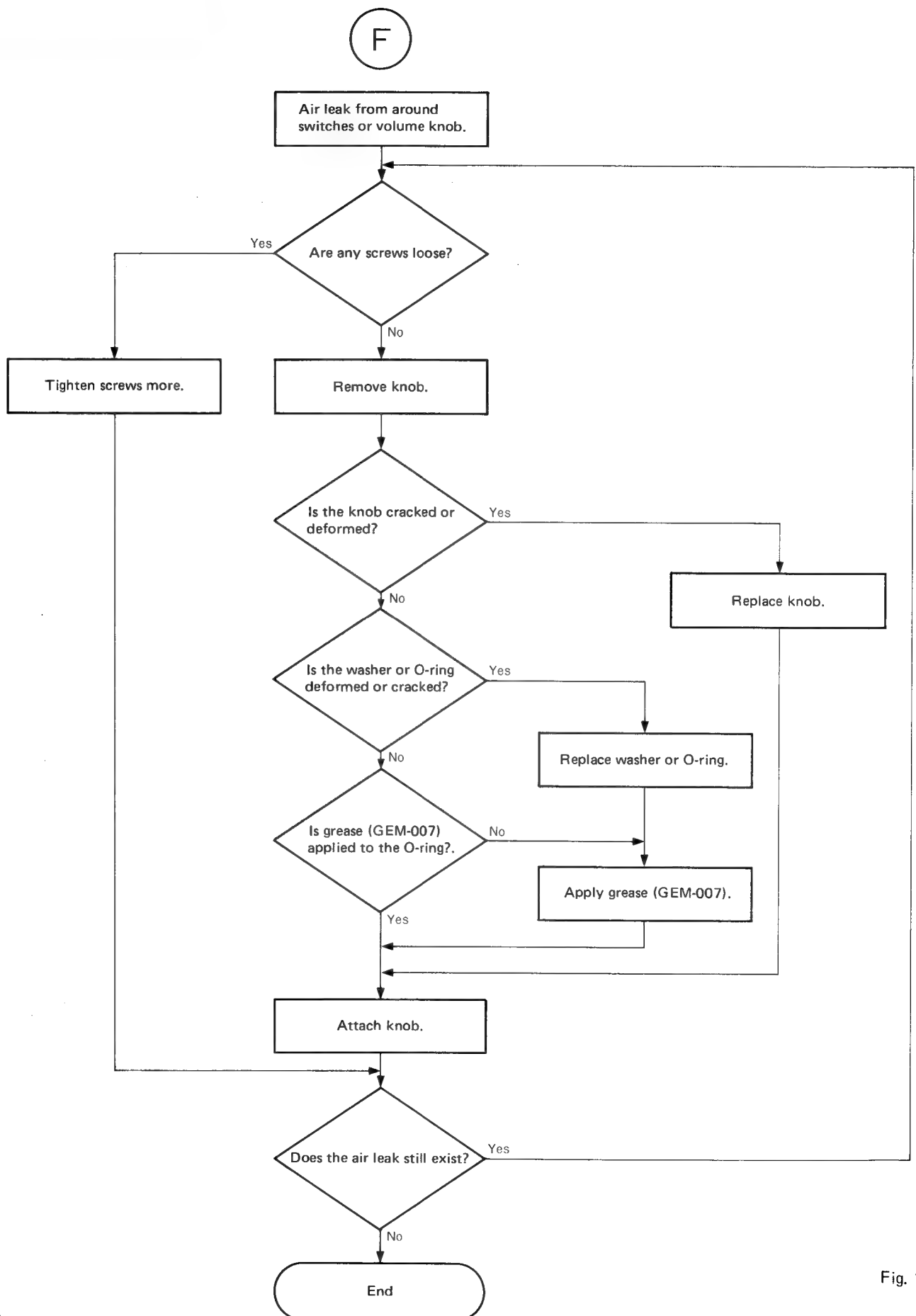


Fig. 15

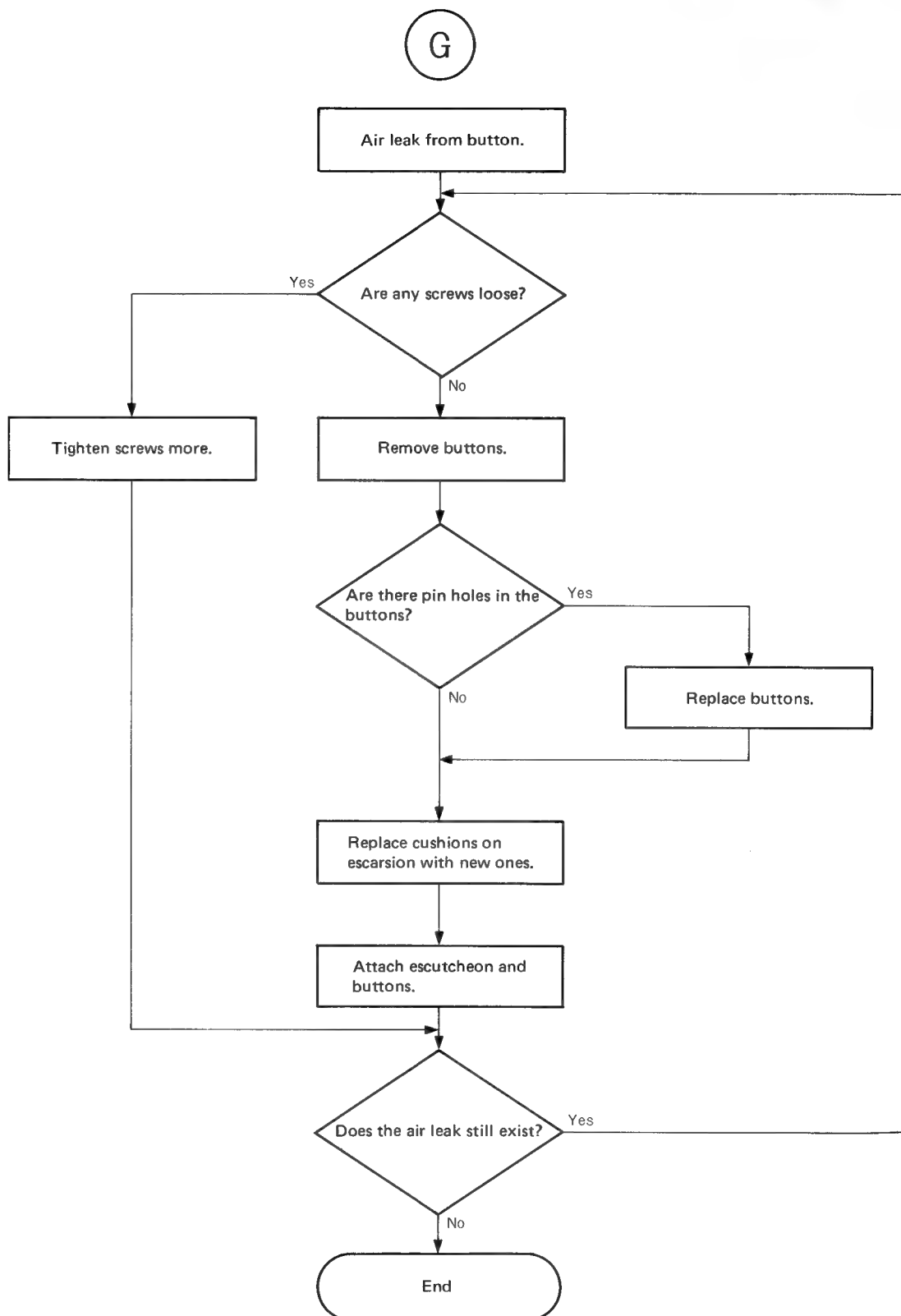


Fig. 16

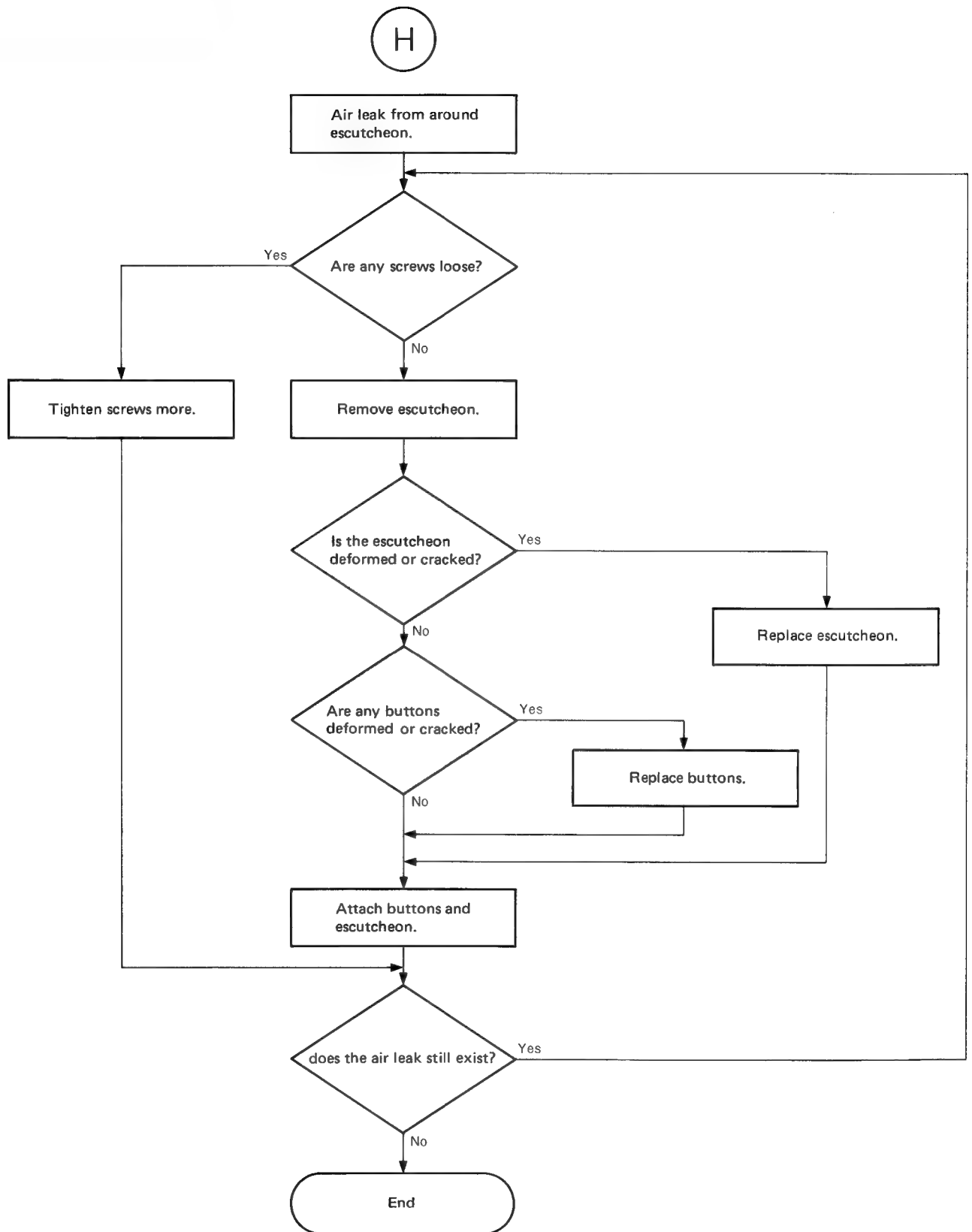


Fig. 17

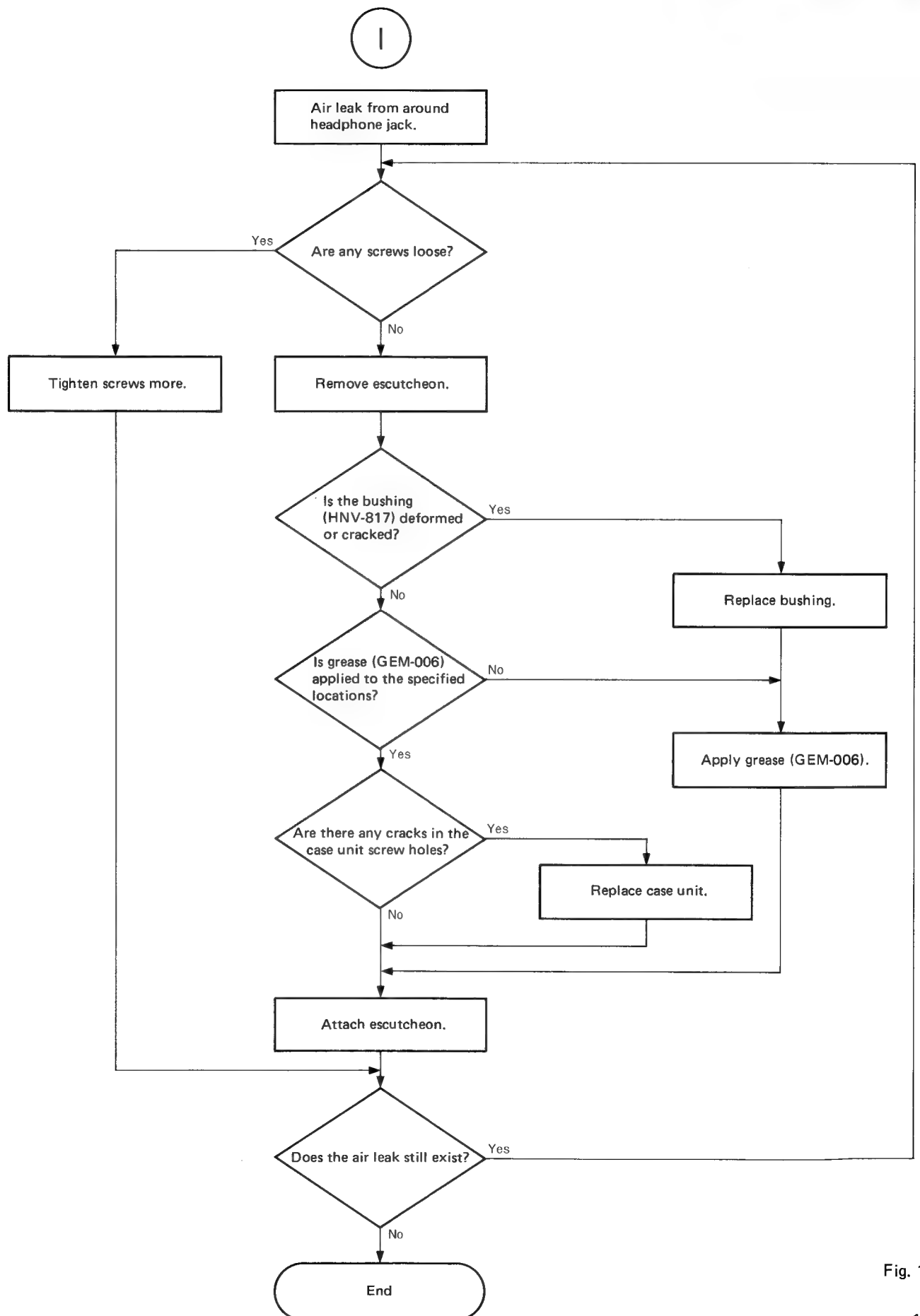


Fig. 18

 **PIONEER**

Service Manual

REPAIR & ADJUSTMENTS



**ORDER NO.
HRT-228-0**

POCKETABLE STEREO CASSETTE PLAYER

PK-5AW

**SILVER
(SV)**

US, CA, E, G

PK-5AW

**YELLOW
(YL)**

US, CA, E, G

- For the circuit and mechanism descriptions, please refer to the supplement of model PK-R7AW service manual (HRT-230).
- 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

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NOTICE:

This model is a water-resistant type. To prevent water leak, be sure to apply the designated silicone grease and adhesive to the parts illustrated on page 2 when re-assembling.

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QUESTIONNAIRE

MODEL

One Model per questionnaire

Dear Servicer,

Thank you for your cooperation in the post-sale service of Pioneer products.

This questionnaire is used as a tool to improve the serviceability of our products and service manuals. Please evaluate this model and service manual by answering the following questions. Your ideas may be realized in our future products. Your answers will be appreciated. Thank you.

PIONEER ELECTRONIC CORP.

T. Nakagawa, Manager, Service Section, International Division

1. SERVICING EVALUATION

Circle applicable number:

Good Fair Poor

a. Disassembly/Re-assembly:

1 2 3 *4 *5

b. Circuit Checks:

1 2 3 *4 *5

c. Replacement of Parts:

1 2 3 *4 *5

d. Adjustment (s):

1 2 3 *4 *5

* If (4) or (5) was circled, please be specific.

QUESTINAIRE

Modèle

Un modèle par questionnaire

Cher Monsieur,

Nous voudrions faire l'enquête sur la réparation et le manuel de service comme indiqué dans la formule ci-jointe. Cette enquête a pour objectif d'améliorer la facilité de la réparation et le manuel de service. Vos précieux conseils seront sûrement considérés dans le processus de la réalisation de produits. Nous vous remercions de votre coopération.

Veuillez agréer, monsieur, l'expression de nos sentiments distingués.

PIONEER ELECTRONIC CORPORATION

T. Nakagawa, Manager, Service Section, Administration Department, International Division

1. EVALUATION EN FACILITE DE SERVICE
MODELE

Circulez le numéro.

Bon, Passable, Mauvais,

a. Démontage/remontage

1 2 3 *4 *5

b. Examen de circuits

1 2 3 *4 *5

c. Rechange de pièces

1 2 3 *4 *5

d. Facilité de réglage

1 2 3 *4 *5

* Si vous circulez No. 4 ou 5, donnez l'explication concrète.

Querido senor,

Muchas gracias por el servicio de post-venta. Su opinión e ideas son muy importantes para nosotros.

Nos complacemos en recibir sus comentarios.

PIONEER ELECTRONIC CORPORATION

T. Nakagawa, Manager, Service Section, Administration Department, International Division

1. EVALUACION
MODELO

a. Desmonte:

b. Examen de circuitos

c. Reemplazo de piezas

d. Ajuste:

* Si marca (4) o (5), déle explicación concreta.

ce manuals.
Your ideas may be

Poor

*4 *5

*4 *5

*4 *5

*4 *5

QUESTINAIRE

Modèle _____
Un modèle par questionnaire

Cher Monsieur,

Nous voudrions faire l'enquête sur la réparation et le manuel de service comme indiqué dans la formule ci-jointe. Cette enquête a pour objectif d'améliorer la facilité de la réparation et le manuel de service. Vos précieux conseils seront sûrement considérés dans le processus de la réalisation de produits. Nous vous remercions de votre coopération.

Veuillez agréer, monsieur, l'expression de nos sentiments distingués.

PIONEER ELECTRONIC CORPORATION

T. Nakagawa, Manager, Service Section, Administration Department, International Division

1. EVALUATION EN FACILITE DE SERVICE
MODELE

Circulez le numéro.
Bon, Passable, Mauvais,

a. Démontage/remontage

1 2 3 *4 *5

b. Examen de circuits

1 2 3 *4 *5

c. Rechange de pièces

1 2 3 *4 *5

d. Facilité de réglage

1 2 3 *4 *5

* Si vous circulez No. 4 ou 5, donnez l'explication concrète.

ENCUESTA

Modelo _____
Uno modelo por encuesta

Querido señor,

Muchas gracias por su cooperación de servicio de post-venta de productos de Pioneer. Esto es para mejorar el servicio de post-venta de nuestros productos. Les pedimos a ustedes responder a las preguntas siguientes. Su opinion e idea estaran tenido en cuenta en los productos futuros.

Nos complacemos en saludarles muy atentamente,

PIONEER ELECTRONIC CORPORATION

T. Nakagawa, Manager, Service Section, Administration Department, International Division

1. EVALUACION EN LA FACILIDAD DE SERVICIO
MODELO

Marque uno entre los numeros siguientes.
Bueno Medio Malo

a. Desmonte:

1 2 3 *4 *5

b. Examen de circuito:

1 2 3 *4 *5

c. Reemplazo de piezas:

1 2 3 *4 *5

d. Ajuste:

1 2 3 *4 *5

* Si marca (4) o (5), ejemplifiquelo concretamente.

e. Su consejo, opinion u idea en el servicio de este modelo.	
2. EVALUACION DE MANUAL DE SERVICIO	
a. Descripción	
b. Circuito diagramma	
3. OTRAS PARTES DIFICIL POR REPARAR	
Respondido por	Fecha :
Nombre :	Edad :
Compania :	
Dirección :	

Manda esta encuesta al domicilio de distribuidor por favor.

e. Votre conseil ou avis sur la service	
2. VOTRE APPRÉCIATION EN SERVICE MANUEL	
a. Déscription	
b. Circuit diagramme	
3. AUTRES POINTS DIFFICILES	
Répondé par :	Date :
Nom :	Age :
Compagnie :	
Adresse :	

Adressez-vous ce questionnaire au distributeur s'il vous plait.

e. Your advice,
2. SERVICE M
a. Circuit & Me
b. Circuit Diagr
3. OTHER
Please descri
Completed by :
Company Name
Address :
City/State/Zip :

Please send this for

e. Your advice, opinion or ideas related to servicing this product.

2. SERVICE MANUAL EVALUATION

a. Circuit & Mechanism Description

b. Circuit Diagram

3. OTHER

Please describe other areas of servicing which you may find difficult.

Completed by :

Date :

Company Name :

Address :

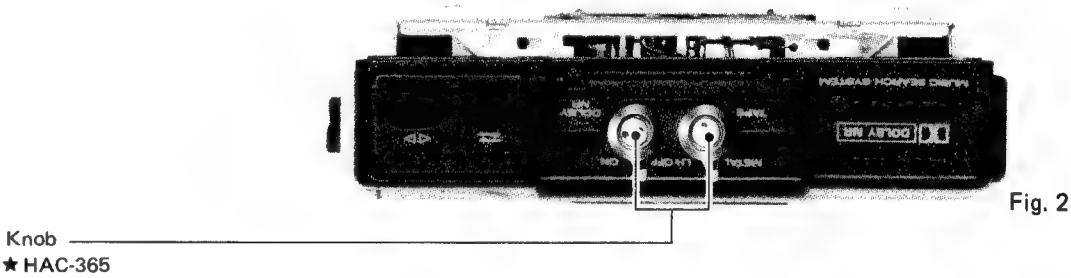
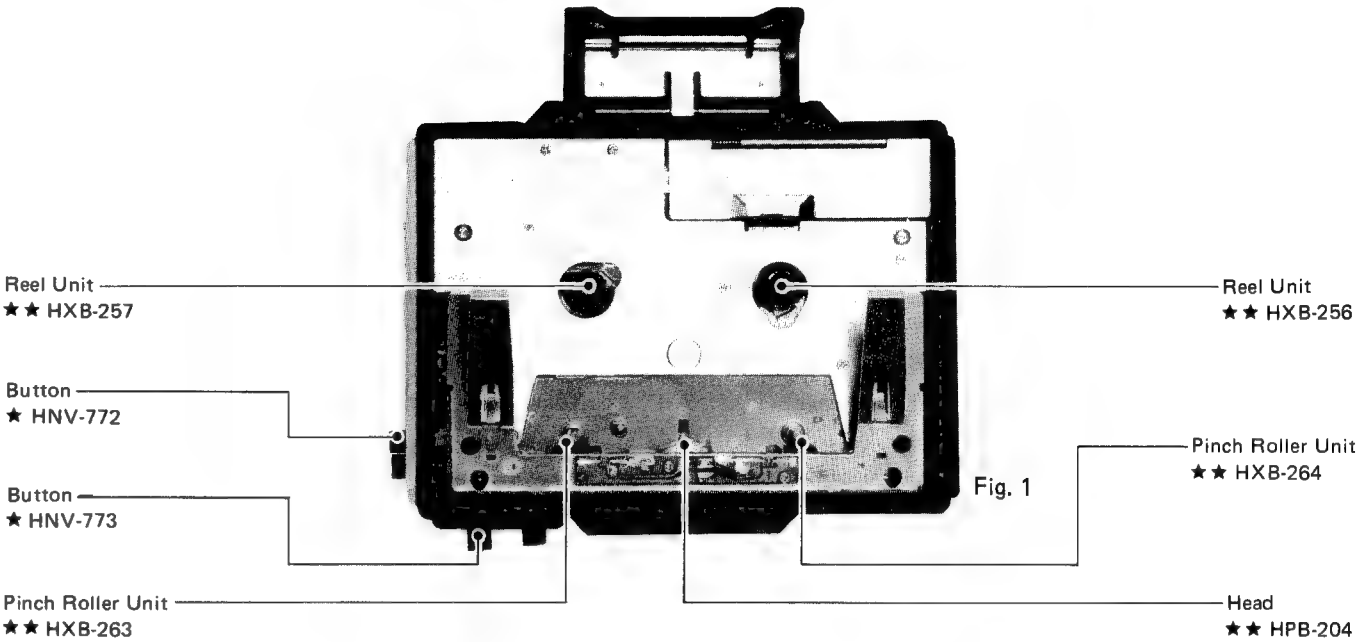
City/State/Zip :

Please send this form filled to the distributor in your country.

1. PARTS LOCATION

NOTE

- For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

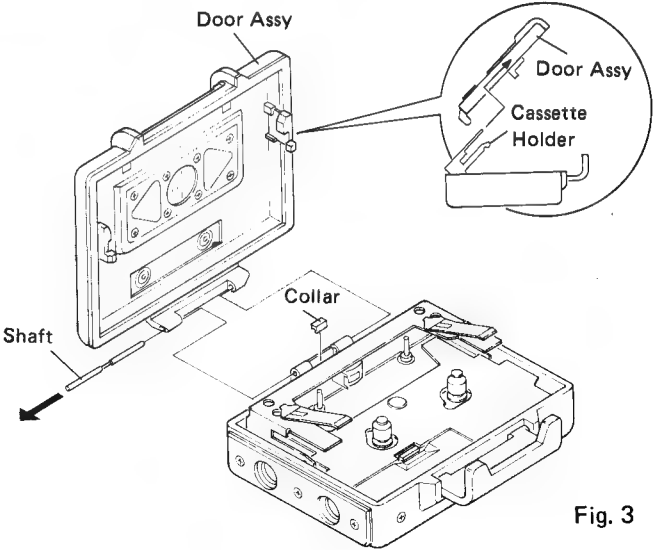


2. DISASSEMBLY

- Removing the Door Assembly
- Pull the shaft out from the left side and remove the door assembly.
 - When assembling the unit again, insert the shaft after passing the cassette holder through the hook in the door assembly.

Order no. for the grease, adhesive and tools.

order no.	description
GYL-015	Silicone based adhesive
GEM-006	Silicone grease for fixed components.
GEM-007	Silicone grease for movable components.
GGL-060	Crab-type screwdriver
GGL-061	Crab-type screwdriver



● Replacing the Packing

1. Remove the packing from the door assembly.
2. When reassembling, attach the new packing using a silicone based adhesive (GYL-015).

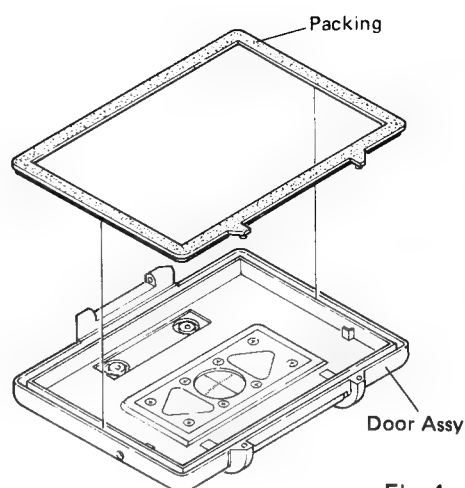


Fig. 4

● Removing the Cassette Mechanism Assy and Other Related Parts

1. The cassette mechanism assy can be removed after removing the escutcheons, brackets and buttons.

Note: When removing the cassette mechanism assy, be careful it does not catch on the volume unit.

Parts marked with an asterisk (*) are coated with silicone grease (GEM-006) to resist water.

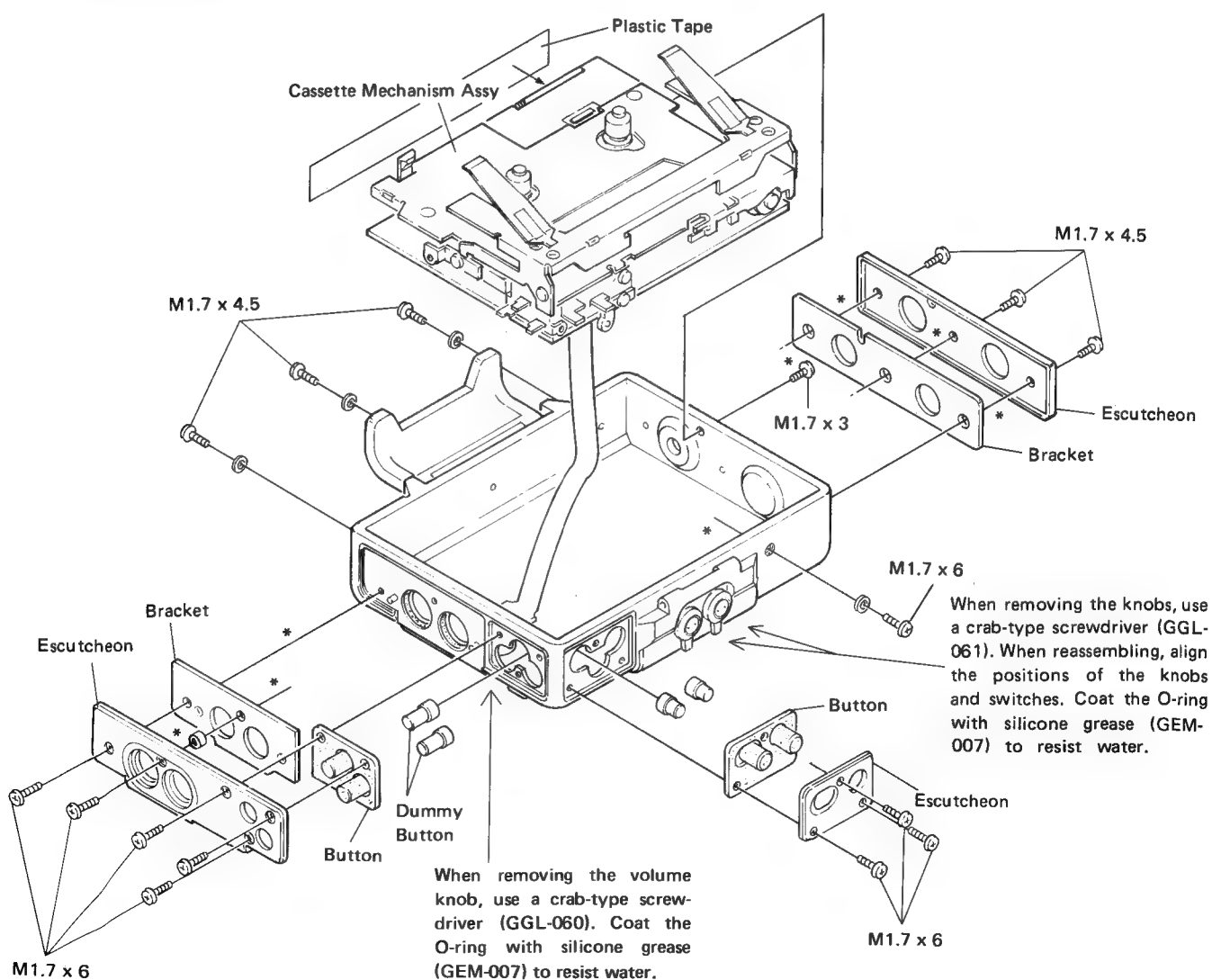
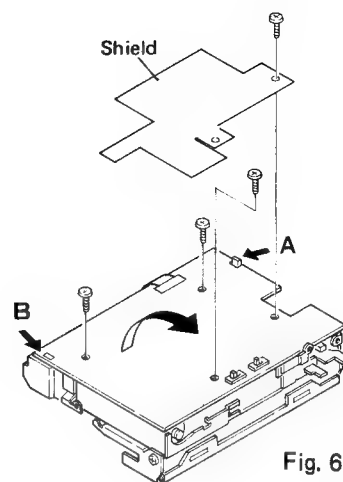


Fig. 5

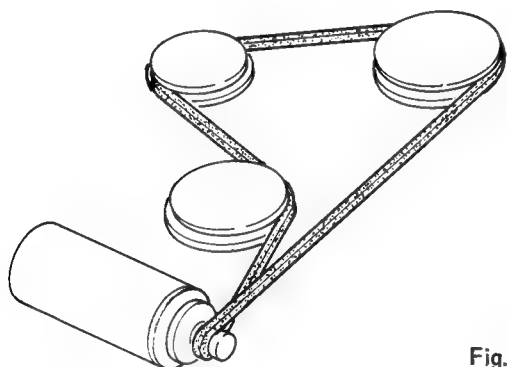
- **Removing the Amp Unit**

1. Remove the four screws and lift off the shield.
2. When the soldering at point A is removed, the amp unit can be removed. (The negative side spring of the battery terminal is at point B; since this can catch on the battery case, remove the amp unit while holding the spring down.)
3. When reassembling, be sure to align the amp unit switch with the cassette mechanism lever.




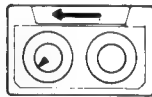
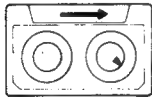
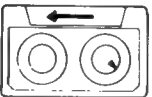

- **Attaching the Belt**

1. Attach the belt as shown in figure 7.



3. ADJUSTMENT

3.1 CHECK POINTS OF CASSETTE MECHANISM

<p>Confirm the following items when replacing parts of the cassette mechanism.</p>	<p>■ Tape speed deviation: $3,000 \pm 90\text{Hz}$ $(4.76 \text{ cm/s} \pm 3\%)$</p> <p>Using an STD-301, measure the speed at the start and end of winding and take the maximum value. Measuring time shall be 5 ~ 6 seconds.</p>	<p>■ Wow and flutter: Less than 0.28% (WRMS)</p> <p>Using an STD-301, measure the wow and flutter at the start and end of winding and take the maximum value. If values indicated by the pointer vary considerably, adjust to 70% of the minimum and maximum values. Measuring time shall be 5 ~ 6 seconds.</p>
<p>■ Fast forward and rewinding time:</p> <p>Less than 150 seconds</p> <p>Using an C-60, set to fast forward and rewind, and measure the time with a stop watch.</p>	<p>■ Winding torque:</p> <p>28 ~ 48 g.cm</p>  <p>Using a cassette type torque meter (120 g.cm), measure the minimum value while in the play mode. Measuring time shall be 5 ~ 6 seconds.</p>	<p>■ F.F torque:</p> <p>More than 70g.cm</p>  <p>Using a cassette type torque meter (120 g.cm), measure the value when the tape stops in the F.F. mode.</p>
<p>■ REW torque:</p> <p>More than 70g.cm</p>  <p>Using a cassette type torque meter (120 g.cm), measure the value when the tape stops in the REW mode.</p>	<p>■ Back tension torque:</p> <p>Less than 3.5 g.cm</p>  <p>After setting in the REW mode without loading a cassette tape for 5 minutes, measure the back tension torque in the play mode, using a cassette type torque meter.</p>	<p>■ Pinch roller pressure:</p> <p>170 ~ 205g</p>  <p>Measure the pressure with a tension meter (1 kg) at the point where the rotor stops rotating at the center of the pinch roller.</p>
<p>■ Button operating force:</p> <p>PLAY Less than 300g</p> <p>STOP Less than 300g</p> <p>One-side Stop Less than 300g</p> <p>PROGRAM Less than 400g</p> <p>FF/REW Less than 600g</p>		

3.2 TAPE SPEED ADJUSTMENT

● Connection Diagram

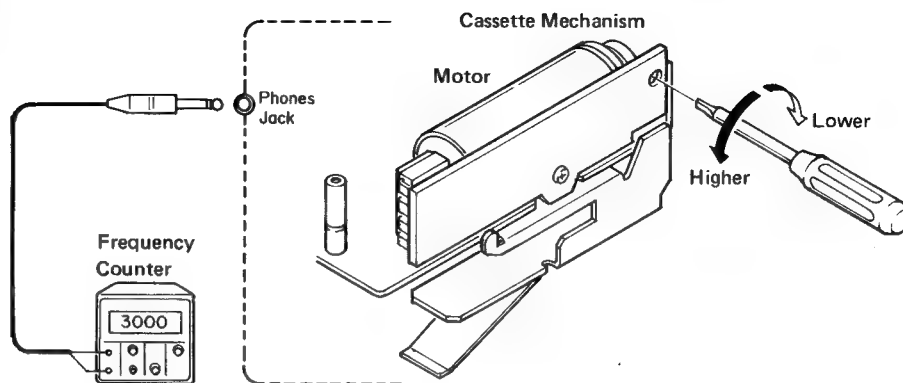


Fig. 8

● To Adjust

1. Connect the frequency counter to the phones jack.
2. Play back an STD-301 (3kHz, -10dB) and adjust the semi-fixed resistor on the motor control unit so the frequency counter reads 3000Hz \pm 90Hz. Rotate clock-

wise to lower the tape speed and counterclockwise to raise the speed.

3. Repeat this procedure with the tape moving in the opposite direction.

3.3 DOLBY NR ADJUSTMENT

● Connection Diagram

Switch position

Dolby NR switch. OFF

Note: Use an electrically insulated screwdriver to perform these adjustments.

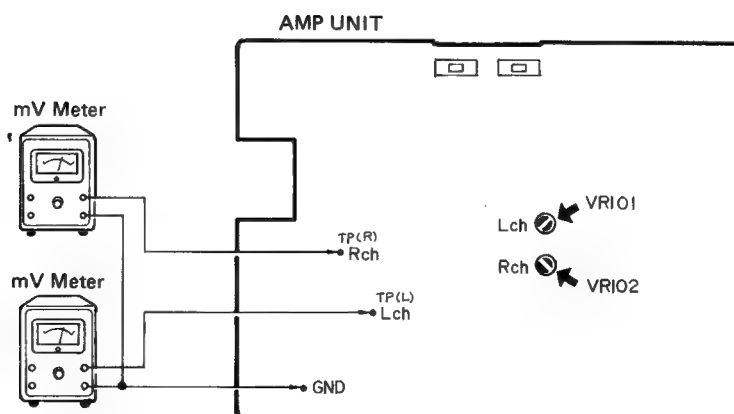


Fig. 9

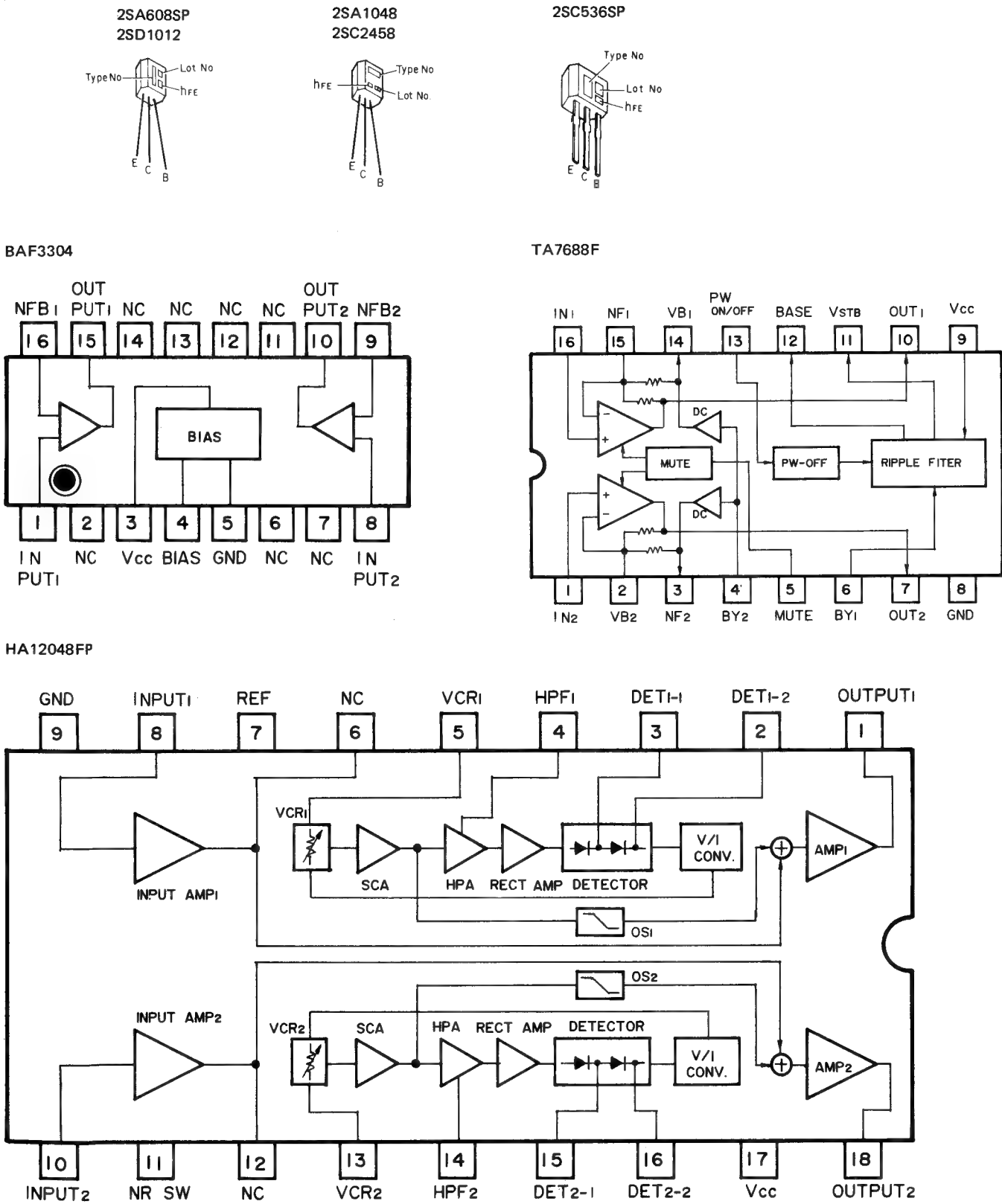
● To Adjust

1. Play back a CT-150 (400Hz, 200nwb/m) in the forward direction and adjust VR101 (Lch) and VR102 (Rch) so the mV meters read 100mV. Rotate clockwise to raise

the voltage and counterclockwise to lower the voltage.

2. Confirm that both mV meters read 100mV \pm 20mV in the reverse playback mode.

● IC's and Transistors



Note: Refer to Service Manual PK-RA7W (HRT-229) for terminal function of HA12048FP and TA7688F.

4. PACKING METHOD

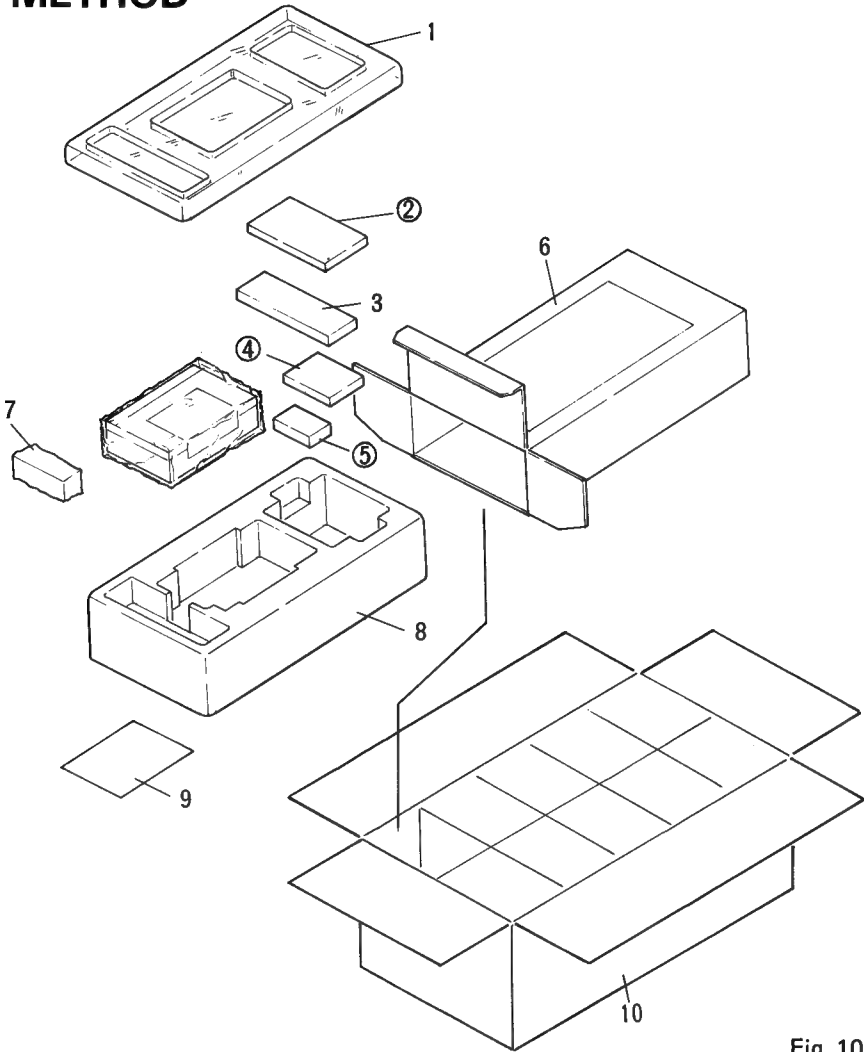


Fig. 10

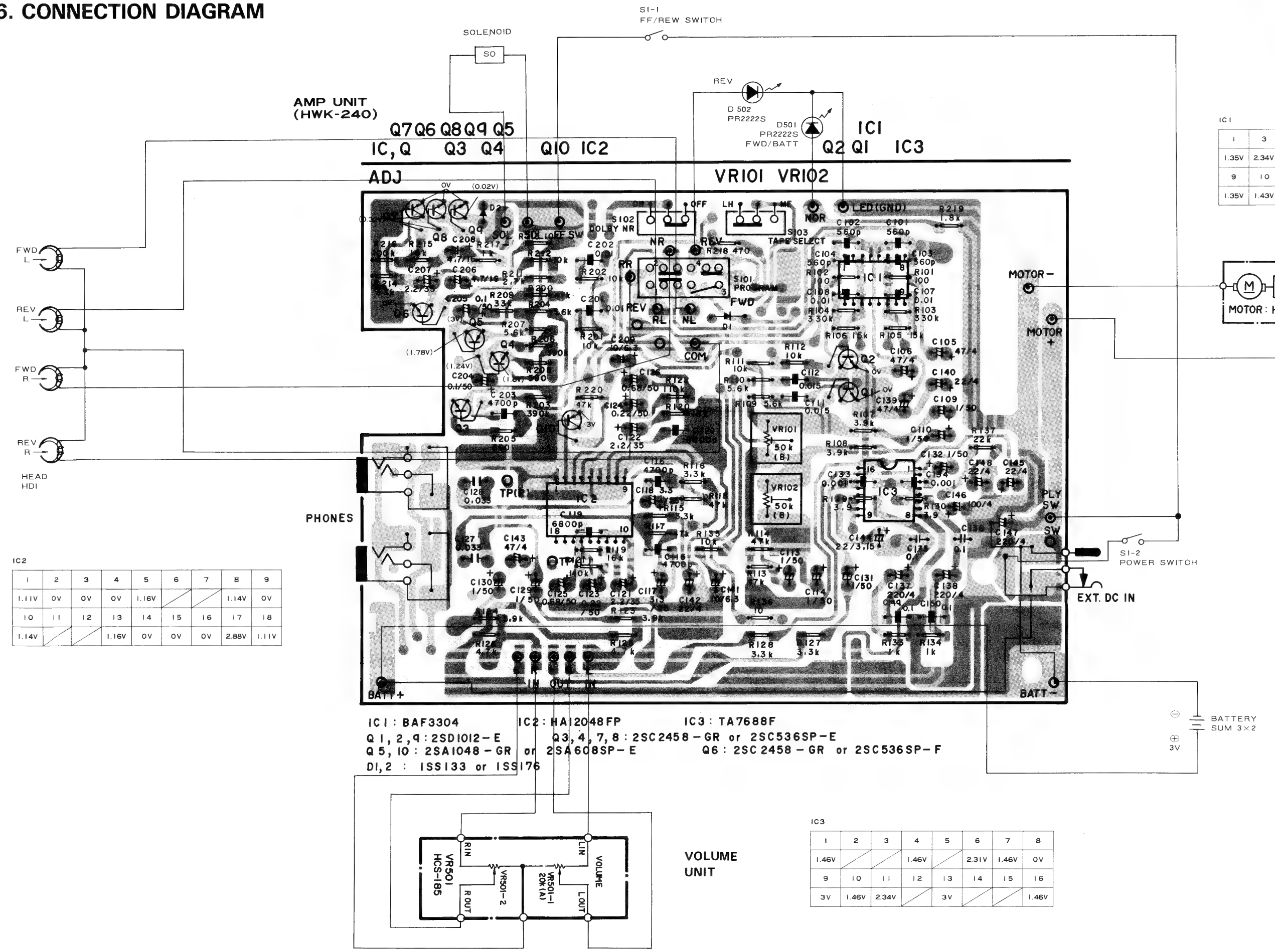
● Parts List

- For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	HHA-836	Protector (B)	9.	HRD-220		Owner's Manual (PK-5AW/US, CA, E, G)
	2.	HMX-112	Recorded Cassette Tape		HRD-221		(English, French, German) Owner's Manual (PK-5AW/E) (Spanish, Swedish, Dutch, Italy, Chinese, Arabic)
	3.	CXB-303	Belt				
	4.		Belt Hanger Unit	10.	HHA-936		Contain Box (PK-5AW(SV)/US)
	5.		Battery		HHA-937		Contain Box (PK-5AW(YL)/US)
	6.	HHA-922	Carton				
	7.	HPH-103	Headphone				
	8.	HHA-835	Protector (A)				

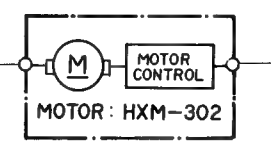
Fig. 11

6. CONNECTION DIAGRAM



IC1

1	3	5	8
1.35V	2.34V	0V	1.35V
9	10	15	16
1.35V	1.43V	1.43V	1.35V



IC2

1	2	3	4	5	6	7	8	9
1.11V	0V	0V	0V	1.16V			1.14V	0V
10	11	12	13	14	15	16	17	18
1.14V			1.16V	0V	0V	0V	2.88V	1.11V

IC1 : BAF3304
Q1, 2, 9 : 2SD1012 - E
Q5, 10 : 2SA1048 - GR or 2SA608SP - E
DI, 2 : ISS133 or ISS176

IC2 : HA12048FP
Q3, 4, 7, 8 : 2SC2458 - GR or 2SC536SP - E
Q6 : 2SC2458 - GR or 2SC536SP - F

IC3 : TA7688F

IC3

1	2	3	4	5	6	7	8
1.46V			1.46V		2.31V	1.46V	0V
9	10	11	12	13	14	15	16
3V	1.46V	2.34V		3V			1.46V

Fig. 12

6. CONNECTION DIAGRAM

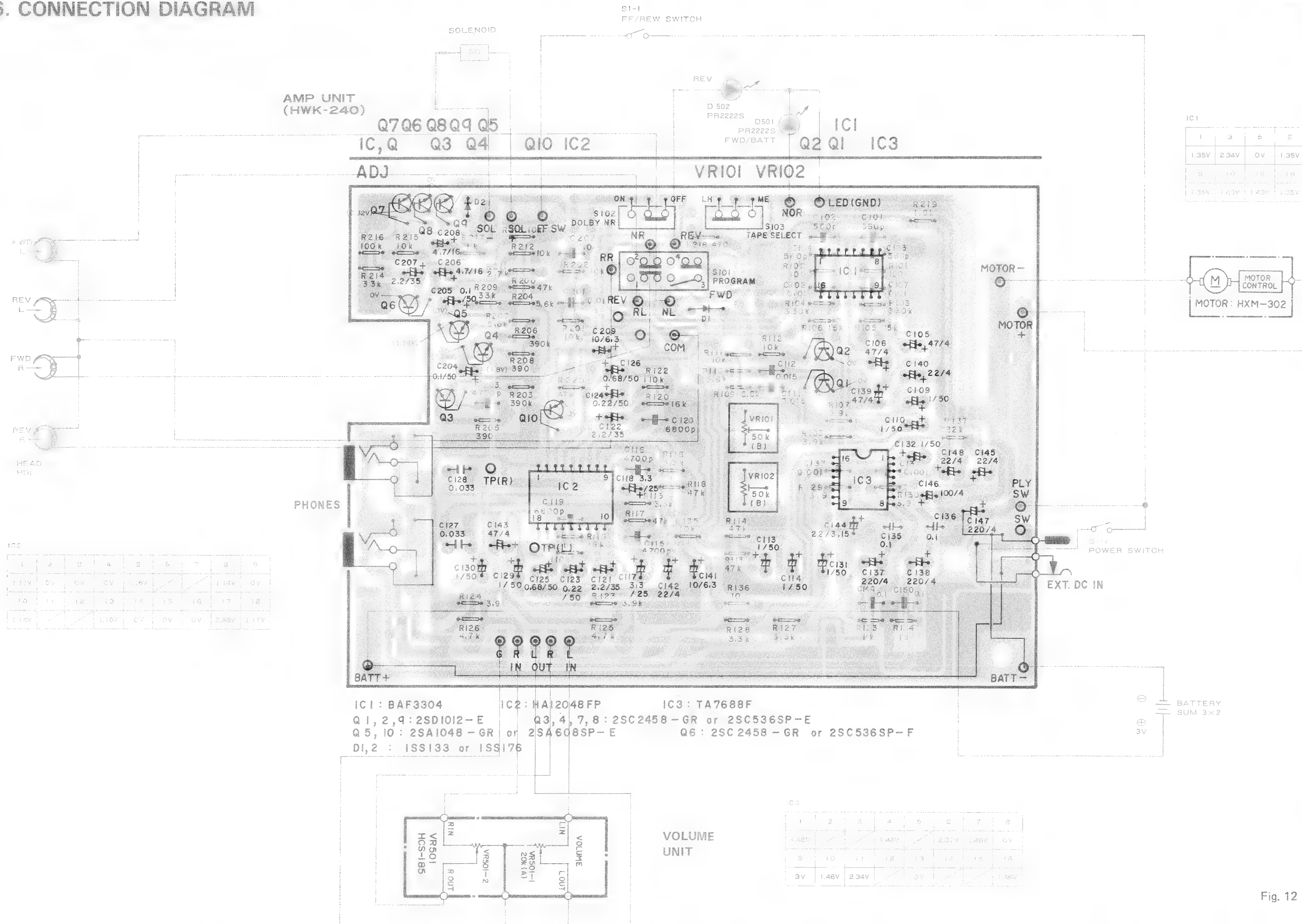


Fig. 12

PK-5AW

7. CHASSIS EXPLODED VIEW

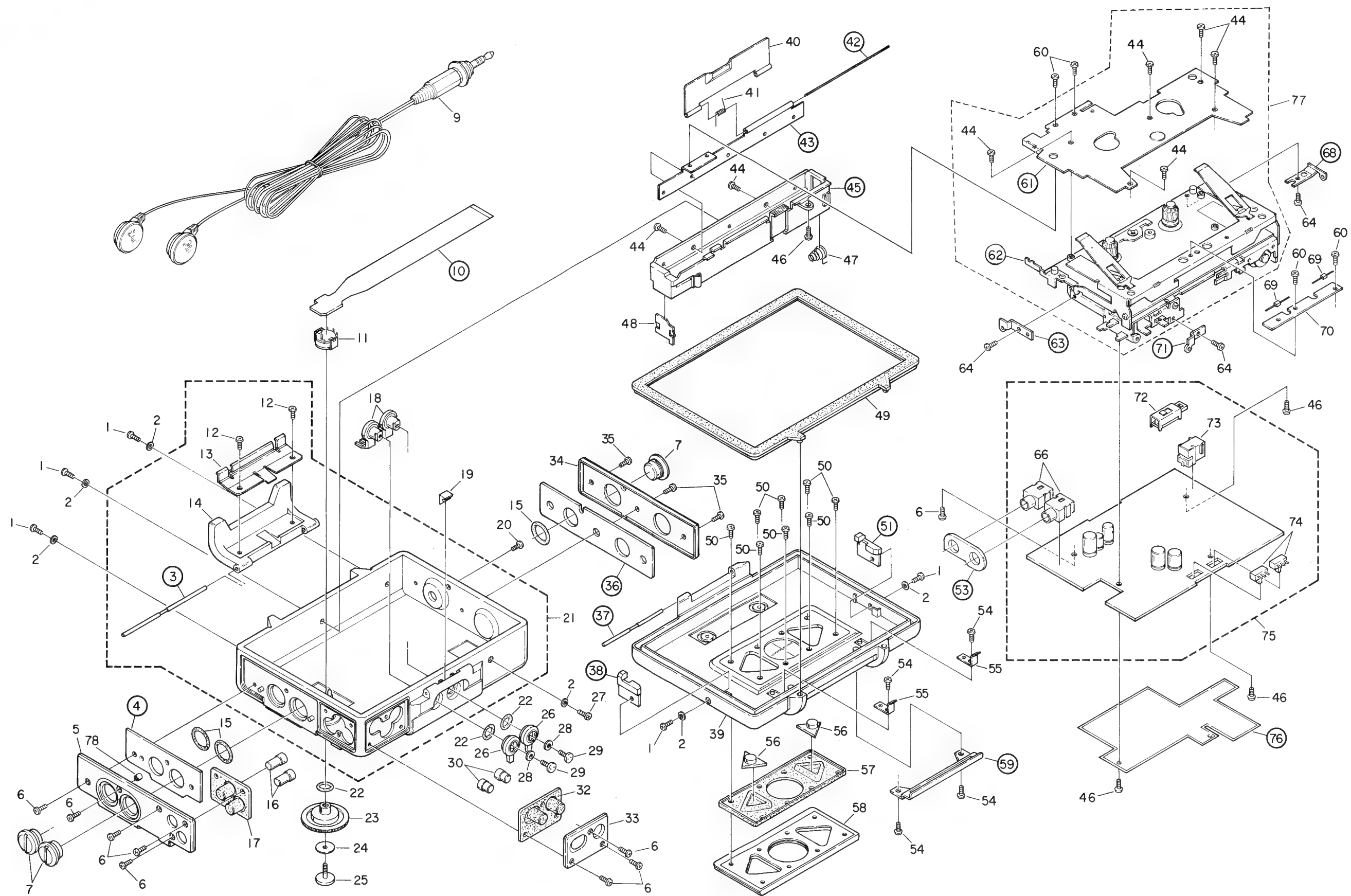


Fig. 13

● Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	HBA-422	Screw M1.7 x 4.5		39.	HXB-325	Door Unit (PK-5AW (SV))
	2.	HBF-184	Washer			HXB-295	Door Unit (PK-5AW (YL))
	3.		Shaft		40.	HNC-930	Cover
	4.		Bracket		41.	HBH-542	Spring
	5.	HNS-729	Escutcheon (PK-5AW (SV))		42.		Shaft
		HNS-767	Escutcheon (PK-5AW (YL))		43.		Bracket
	6.	HBA-361	Screw M1.7 x 6		44.	HBA-198	Screw M1.7 x 2
	7.	HLA-519	Cap		45.		Battery Case
	8.	VACANT	----		46.	HBA-165	Screw M1.7 x 3
	9.	HPH-103	Headphone		47.	HBH-543	Spring
	10.		P.C. Board		48.	HLB-217	Terminal
★ ★	11.	HCS-185	Volume		49.	HNV-768	Packing (PK-5AW (SV))
	12.	HBA-339	Screw			HNV-782	Packing (PK-5AW (YL))
	13.	HNC-936	Bracket		50.	HBA-262	Screw M1.7 x 3.5
	14.	HNS-731	Hook		51.		Arm
	15.	HNV-776	O ring		52.	VACANT	----
★	16.	HAC-363	Dummy Button		53.		Cover
★	17.	HNV-772	Button		54.	HBA-400	Screw M1.7 x 2.5
	18.	HNV-774	Lever		55.	HLB-214	Spring
	19.	HNV-779	Collar		56.	HNV-794	Bush
	20.	HBA-355	Screw M1.7 x 3	★	57.	HNV-770	Button
	21.	HXB-328	Case Unit (PK-5AW (SV))		58.	HXB-296	Cover Unit (PK-5AW (SV))
		HXB-321	Case Unit (PK-5AW (YL))			HXB-322	Cover Unit (PK-5AW (YL))
	22.	HNV-775	O ring		59.		Bracket
★	23.	HAA-239	Knob (VOLUME)		60.	HBA-159	Screw M1.7 x 1.6
	24.	HBF-183	Washer		61.		Cover
	25.	HBA-333	Screw		62.		Cassette Mechanism Unit
★	26.	HAC-365	Knob (TAPE, DOLBY NR)		63.		Bracket
	27.	HBA-425	Screw M1.7 x 6		64.	HBA-257	Screw M1.7 x 2
	28.	HBF-182	Washer		65.	VACANT	----
	29.	HBA-332	Screw		66.	HKN-167	Jack (PHONES)
★	30.	HAC-364	Dummy Button		67.	VACANT	----
	31.	VACANT	----		68.		Bracket
★	32.	HNV-773	Button	★	69.	PR2222S	LED
	33.	HNS-761	Escutcheon (PK-5AW (SV))		70.	HNP-548	P.C. Board
		HNS-730	Escutcheon (PK-5AW (YL))		71.		Bracket
	34.	HNS-841	Escutcheon (PK-5AW (SV))	★ ★	72.	HSH-154	Switch (PROGRAM)
		HNS-840	Escutcheon (PK-5AW (YL))		73.	HKN-142	Jack (DC IN)
	35.	HBA-358	Screw M1.7 x 4.5	★ ★	74.	HSH-156	Switch (TAPE, DOLBY NR)
	36.		Bracket		75.	HWK-240	Amp Unit
	37.		Shaft		76.		Shield
	38.		Arm		77.	HXB-301	Cassette Mechanism Assy
					78.	HNV-817	Bush

8. CASSETTE MECHANISM EXPLODED VIEW

● Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	HBA-163	Screw M1.7 x 2.5		46.	HBH-524	Spring
★ ★	2.	HSN-146	Switch (FF/REW, POWER)		47.	HNC-909	Lever (PROGRAM)
	3.		P.C. Board		48.	HBH-516	Spring
	4.	VACANT	----		49.	HLA-509	Collar
	5.	VACANT	----		50.		Arm Unit (STOP)
★ ★	6.	HXB-257	Reel Unit		51.		Arm Unit (PLAY)
★ ★	7.	HXB-256	Reel Unit		52.	HBH-530	Spring
	8.	HXB-276	Pulley Unit		53.	HBH-534	Spring
	9.	HBH-117	Washer		54.	HBH-533	Spring
	10.	HBH-181	Washer	★ ★	55.	HXB-263	Pinch Roller Unit
	11.	HNV-760	Gear		56.	HNC-903	Arm
	12.	HBH-180	Washer		57.	VACANT	----
	13.	HBH-179	Washer		58.	HLA-508	Screw
	14.	HNV-758	Gear	★ ★	59.	HPB-204	Head
	15.	HBH-145	Washer		60.	HBH-529	Spring
★ ★	16.	HNT-158	Belt		61.	HBA-175	Screw M2 x 2.5
	17.	VACANT	----		62.	HNC-905	Clamper
	18.	HBA-160	Screw M1.7 x 1.8		63.	HNC-902	Spacer
	19.	HBH-549	Spring		64.	HNC-904	Arm
	20.		Holder Unit		65.	HXB-267	Arm Unit
	21.	VACANT	----	★ ★	66.	HXB-264	Pinch Roller Unit
	22.	VACANT	----		67.	HNV-759	Gear
	23.		Chassis Unit		68.	HNC-906	Lever (STOP)
	24.	HXB-258	Gear Unit		69.	VACANT	----
	25.	VACANT	----		70.	VACANT	----
	26.	HBH-520	Spring		71.	VACANT	----
	27.	HBH-522	Spring		72.	HXB-262	Flywheel Unit
	28.	HBH-519	Spring		73.	HBA-154	Screw M1.4 x 3
	29.	HXB-259	Gear Unit		74.	HBE-129	Washer
	30.	HXB-261	Flywheel Unit		75.	HNR-191	Ball
★ ★	31.	HXM-302	Motor		76.	HBH-515	Spring
	32.		Lever		77.	HNV-761	Guide
	33.	CBG-005	Washer		78.	VACANT	----
	34.	HLA-507	Collar		79.	HBA-165	Screw M1.7 x 3
	35.	HBA-205	Screw M1.7 x 4.5		80.	HBH-532	Spring
	36.	HNT-141	Bush		81.	HBH-535	Spring
	37.	HBA-168	Screw M1.7 x 4.5		82.	HXB-269	Lever Unit (PLAY)
	38.	HXP-112	Solenoid		83.	HXB-266	Holder Unit
	39.	YE12FUC	Washer		84.	HBH-528	Spring
	40.	HBH-187	Washer		85.		Lever
	41.	HNV-762	Arm		86.	HBH-521	Spring
	42.	HBH-522	Spring		87.	HXB-275	Arm Unit
	43.	HNC-908	Lever		88.	VACANT	----
	44.	HBH-526	Spring		89.	VACANT	----
	45.	YE15FUC	Washer		90.	HLA-510	Shaft

● Cassette Mechanism

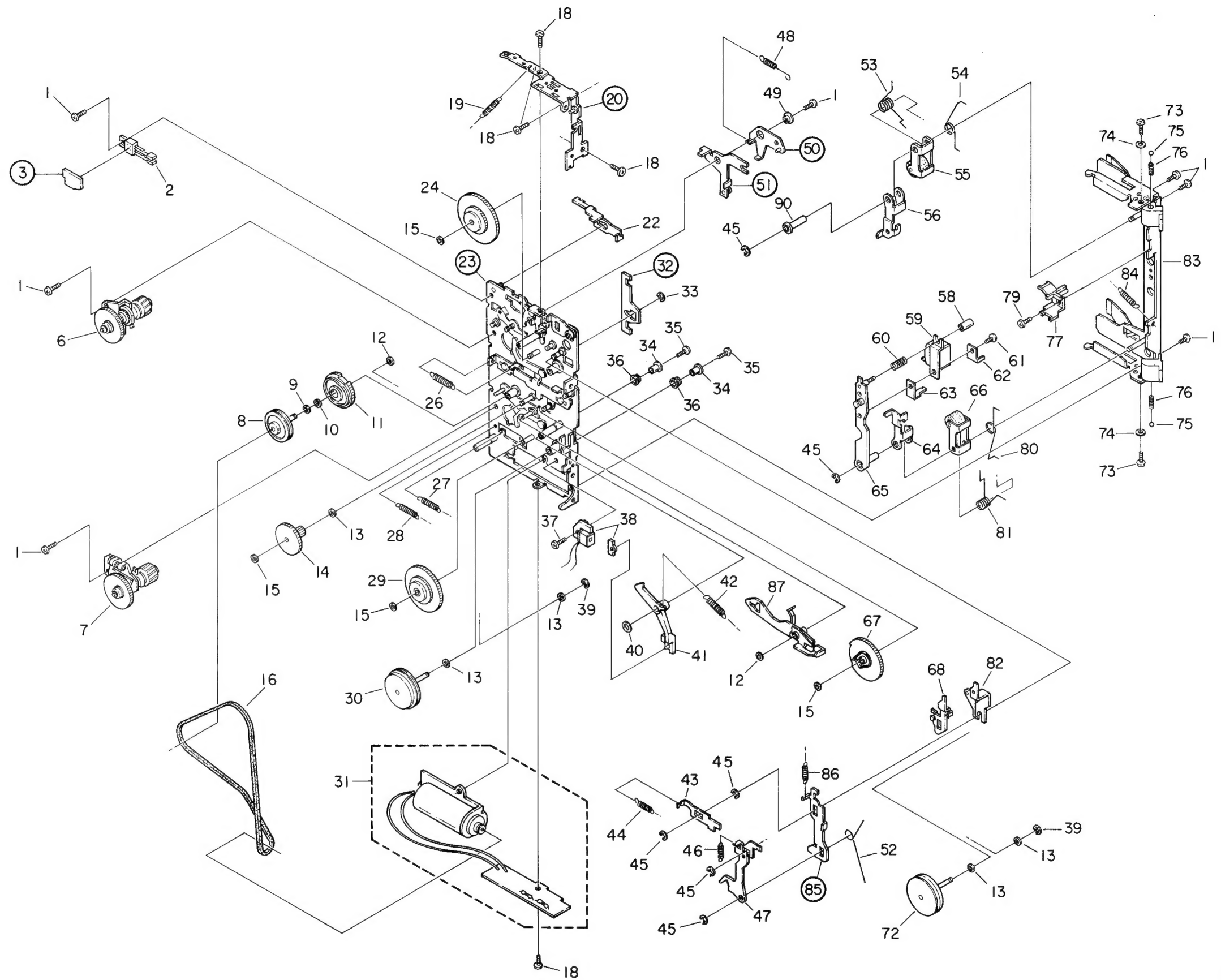


Fig. 14

9. ELECTRICAL PARTS LIST

NOTE:

When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56×10^1 561 RD1/4PS 5 6 1 J

47kΩ 47×10^3 473 RD1/4PS 4 7 3 J

0.5Ω 0R5 RN2H 0 R 5 K

1Ω 010 RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562×10^1 RN1/4SR 5 6 2 1 F

- For your parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.
- ★ ★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.

Amp Unit (HWK-240)

MISCELLANEOUS

Mark	Symbol & Description	Part No.
★ ★ IC1		BAF3304
★ ★ IC2		HA12048FP
★ ★ IC3		TA7688F
★ ★ Q1, Q2, Q9		2SD1012
★ ★ Q3, Q4, Q6 – Q8		2SC2458 or 2SC536SP
★ ★ Q5, Q10		2SA1048 or 2SA608SP
★ D1, D2		1SS133 or 1SS176
★ ★ S101	Switch (PROGRAM)	HSH-154
★ ★ S102, S103	Switch (DOLBY NR, HSH-156 TAPE SELECT)	
★ ★ VR101, VR102	Semi-fixed, 50kΩ (B)	HCP-142

CHIP RESISTORS

Mark	Symbol & Description	Part No.
	R101 – R130, R133 – R137, R200 – R209, R211 – R220	RS1/8S□□□J
	R131, R132, R138 – R199, R210	VACANT

CAPACITORS

Mark	Symbol & Description	Part No.
	C101 – C104 Chip Capacitor C105, C106, C139	CKSYB561K50 CEA470M4LS or CEA470M6R3LS

Mark	Symbol & Description	Part No.
	C107, C108, C201, C202 Chip Capacitor	CKSYB103K50
	C109, C110, C113, C114, C129 – C132	CEA010M50LS
	C111, C112 Chip Capacitor	CKSYB153K50
	C115, C116, C203 Chip Capacitor	CKSYB472K50
	C117, C118	CEA3R3M25LS
	C119, C120 Chip Capacitor	CKSYB682K50
	C121, C122, C207	CEA2R2M35LS
	C123, C124	CEAR22M50LS
	C125, C126	CEAR68M50LS
	C127, C128	CQMA333J50L
	C133, C134 Chip Capacitor	CKSYB102K50
	C135, C136 0.1μF	CCG-093 or CKDBC104M25
	C137, C138, C147	CEA221M4LL
	C140, C142, C145, C148	CEA220M4LS or CEA220M6R3LS
	C141, C209	CEA100M6R3LS
	C143	CEA470M4LL
	C144	CSZA220M3R15
	C146	CEA101M4LL
	C149, C150 Chip Capacitor	CKSYF104Z25
	C151 – C200	VACANT
	C204, C205	CEA0R1M50LS
	C206, C208	CEA4R7M16LS

Volume Unit

Mark	Symbol & Description	Part No.
★ ★	VR501 Volume, 20kΩ (A)	HCS-185

Miscellaneous Parts List

Mark	Symbol & Description	Part No.
★	D501, D502 LED	PR2222S
★ ★	S1 Switch (FF/REW, POWER)	HSN-146
★ ★	HD1 Head	HPB-204
★ ★	M Motor	HXM-302
	SO Solenoid	HXP-112